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ABSTRACT

This booklet is intended to provide useful information to students and others in the process of making career choices or seeking satisfying employment. The first half of the booklet covers various aspects of the career choice/job search processes. Included among the topics discussed are the following: self-assessment of career planning knowledge, innovative strategies for business success in Alaska, child labor laws, child care, nontraditional employment, the Job Corps, Alaska's largest employers, tech prep, job search strategies, career questions to ask, Alaska's economy, summer internships, the Alaska Native Coalition on Employment and Training, marketable skills, stress management, the Americans with Disabilities Act, school shopping tips, financial aid, and education and vocational training sites in Alaska. The second half of the booklet is an occupational table that contains the following information on nearly 300 occupations: job duties, job outlook in Alaska, number of Alaskans employed, approximate monthly pay, required/suggested school subjects and level of training, related occupations, and hiring practices. (MN)

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ALASKA 1993-1994 Career Guide

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Stepping Stones to the Future

ALASKA DEPARTMENT OF LABOR • WALTER J. HICKEL, GOVERNOR

CE 064 450

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"Flying a plane is more than science. It's also art."

Greetings From
the Flightdeck,

While you are reading this letter it is likely that I am flying somewhere over the great state of Alaska. As I fly each route I am continually amazed and struck by the beauty, size, and potential of this great state. Whether flying over the mountains and pristine glaciers of Southeast, or a thousand migrating caribou while enroute to Barrow, I consider myself one of the luckiest people in the world. My job is the greatest!

How about your job? Are you happy with what you are doing? If in school what kind of job are you studying for? If you are having trouble in answering these types of questions, now might be a good time to take a few minutes and page through this booklet and start to think and plan for your own career.

This publication, ***Alaska Career Guide: Stepping Stones to the Future***, will give you some helpful tips and help you to think seriously about your future. It will provide you with information of the many educational and financial resources that are available. Now is the time to act!

Planning and training are key elements of being a successful pilot. They are also key elements of finding the type of job you will be happy with. Today's world is changing rapidly and it will continue to change. Now is the time to equip yourself with the skills and training that will be needed in today's workforce and the workforce of the 21st century.

Best of luck to you,

Christy Gomes

Christy Gomes, Captain
Alaska Airlines

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Governor - Walter J. Hickel
Commissioner - Charles W. Mahlen
Director - David Teal
Chief - Chuck Caldwell

Alaska Career Guide: Stepping Stones to Your Future was published to provide useful information to students and others in the process of making career choices or seeking satisfying employment. Many sources in the Departments of Education, Labor, Community and Regional Affairs and Health and Social Services assisted in developing and contributing to this publication. We are also indebted to faculty at Juneau-Douglas High School for their assistance. This publication is produced by the Research & Analysis Section of the Alaska Department of Labor in cooperation with the Alaska Occupational Information Coordinating Committee (AOICC).

JoAnn Wilson - Labor Economist
Dean Rasmussen - Labor Economist
Nancy Hilbert - Statistical Clerk
Arnold Leibelt - Statistical Technician
J. Pennelope Gefferth - Editor
Josephine Ruby - Publication Technician

The AOICC is a multi-agency body mandated by the federal government to coordinate and deliver occupational and career information. AOICC board members are:

Judy Knight
Chair - Dept. of Labor

Terry Miller
Dept. of Commerce and & Economic Development

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Dept. of Education
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William Mailer
Dept. of Community and Regional Affairs

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Alaska Career Information System

James Schlegel
University of Alaska

Diane Barrans
Alaska Commission of Postsecondary Ed

Sandy Armstrong
Dept. of Health & Social Services

Barbara Thompson
Dept. of Education

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Our aim is to make this career information publication as useful as possible to everyone. Please offer any comments you may have to:

Brynn Keith, AOICC Executive Director
Alaska Department of Labor
Research & Analysis Section
PO BOX 25501
Juneau, AK 99802-5501

THINK ABOUT THIS

You have a plain bar of iron worth about $5.

- Made into a horseshoe, it's worth about **$11.**
- Made into screwdrivers, it's worth about **$15.**
- Made into needles, it's worth about **$3,500.**

The same is true of another kind of material - **YOU.**
Your value is determined by what you decide to make of

from Bane-Clene Professional Cleaning Digest

High School's Over!

N O W W H A T ?

by James Schlegel

Congratulations! You stuck it out and accomplished a major goal--high school graduation. It probably seemed like it would take forever to get here but suddenly--here you are. So now what?

Everyone has talked about how important it is to continue your education and training--to go to college and get that degree. But you may not feel four years of college is for you right now and you're wondering "What is out there for me?". Take heart, there are many options open to you, short of the traditional four-year college degree. And you need to know that these options can lead you directly to a well paying job and a successful career!

On page 38 you will find lists of education and training sites in Alaska, some that you may not have thought about before. These lists include everything from private institutions and the military's programs to vocational schools, apprenticeships, and multiple campuses of the University of Alaska.

Exciting career fields include computers, law enforcement, aviation, business, medical, tourism, drafting, refrigeration and heating, electronics and other technical areas. Most programs are from one to two years. When you complete the program you will have earned a certificate or associate degree. Many feel this is the employment degree of the future. You will also have the necessary skills to obtain a well paying job leading to a bright future!

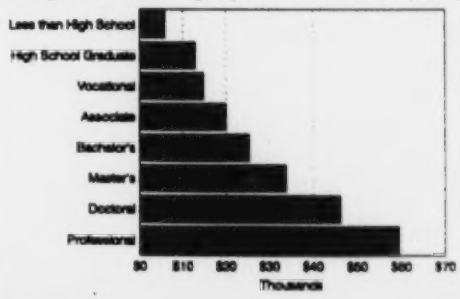
Look around you at adults you consider successful. Did they become successful by being lucky--or because they had a plan and followed it? No one sets out to become unsuccessful. For each of us life presents many roadblocks, temptations, obstacles and alternate paths. The future belongs to those who "plan their work and work their plan." And it is very serious work.

Accomplishing your important goals in life does not come easily! Such goals demand planning, commitment, and follow-through as well as making the right decisions. Make a commitment to your future--plan for it now. If traditional college/university degree training programs do not interest you right now, consider a certificate or associate degree.

Remember, no one plans to fail--most often they merely fail to plan!

"What you earn depends on what you can learn."
President Bill Clinton

Average Annual Earnings by Educational Level (1990)



Source: U.S. Bureau of the Census

QUIZ YOURSELF:

Testing Your Career Planning Knowledge

Circle the answer you think is correct.

1. T F Most people have the ability to do well in any job if they set their minds to do it.
2. T F Except for the income it provides, your job has little influence on your way of life.
3. T F The average American spends more waking time in work-related activities (including homemaking) than any other activity.
4. T F There is only one "right job" for you in terms of your ability.
5. T F Most persons remain in the same job throughout their adult lives.
6. T F Few women work outside of the home after marriage.
7. T F Apprentices are paid while they learn.
8. T F The Alaska Department of Labor provides free information about job openings and job training programs.
9. T F Over two-thirds of all existing job openings do not require a college degree.
10. T F Programs at two-year colleges are limited to students who want to transfer to four-year colleges.
11. T F Entering an occupation is the only way you can learn whether you might like it.
12. T F The earlier you choose your life's work the better.
13. T F Women now are working at jobs which were once held only by men.
14. What will the labor force probably be like 10 years from now?
    - a Most jobs will require four or more years of college.
    - b There will be a greater percentage of jobs for unskilled workers.
    - c There will be a greater percentage of jobs for those with technical skills acquired beyond high school.
15. Which one of the following is the best way to begin career planning?
    - a Look at what is available on the job market.
    - b Take tests to find out what you should do.
    - c Decide what it is you consider most important in life.
16. If you are interested in so many occupations you cannot make up your mind, you should first:
    - a Try out as many jobs as you can.
    - b Try one and if you like it, stick with it.
    - c Find out more about what each occupation is like.

Answers to Quiz on page 9.
Source: Careers Now! Making the Future, Port Angeles, Washington School District 121

No Time for Negativity

Despite reports about the squeezed U.S. economy and overall hiring freezes, America's teens continue to be upbeat. Fully 60 percent expect to have a better quality of life than their parents, 32 percent expect salaries of $30,000 or more in their first job and 47 percent think they'll earn $60,000 or better by the age of 40, according to a survey of 3,500 high school seniors by *Career & Colleges* magazine and the National Association of College Admission Counselors.

Sixty-one percent of those surveyed plan to attend a four-year college and 17 percent say they are heading for a two-year college. Science, technology and health are the fields of choice for 38 percent.

On the social front, more seniors said finding a cure for AIDS is the achievement they'd most like to see in their lifetimes (46 percent), followed by protecting the environment (23 percent) and world peace (13 percent).

In school, peers have the strongest influence on decisions about education and career plans, say 39 percent of the seniors. Another 33 percent credit their teachers and 22 percent cited school counselors. A strong majority--72 percent--say parents are the strongest influence outside of school, with 18 percent ranking friends highest, six percent other relatives and four percent siblings.

Source: Vocational Education Journal, May 1993

Innovative Plans for Success

NEW WAYS OF DOING BUSINESS IN ALASKA

Fax machines • electronic shopping malls • computers • modems • satellite communications • electron[illegible] • beepers • cellular telephones ...

What do these items have in common? All are examples of high technology used doing business in Alaska today. Many businesses [illegible] markets and customers within reach and broaden the range of products [illegible] technology helps to smooth the seasonal ups and downs that exist within [illegible] economy.

The following articles are intere[illegible] of how today's high technology is combining with solid marketing practices, thus [illegible] products and services easily available wherever they're needed.

Merchant Moves Merchandise by Modem:

Alaska Peddler turns to computer network for worldwide sales

by Lisa Scagliotti

The folks at the Alaska Peddler gift shops in Juneau come close to hibernating each winter as cruise-ship traffic halts and tourists become rare in the capital.

But this winter, owners Lynn and Jerry Reinwand decided to try something new to boost business during the sleepy season. They still closed two of their three shops and kept just their customary two employees, but they added close to 2 million people to their market.

Most of the new customers have never seen the inside of an Alaska Peddler store. It's probably safe to say most probably never have seen Juneau or any other part of Alaska, for that matter.

They shop the Alaska Peddler from the comfort of their homes and offices in the Lower 48 states, Canada and beyond - in places like Australia, Japan and South Africa.

They're ordering Alaska salmon, University of Alaska T-shirts, mugs, fish-leather wallets, jewelry and more. The customers have one essential thing in common--personal computers equipped with modems.

Jerry Reinwand, who keeps busy as a lobbyist when not retailing, also is a computer enthusiast. Last fall he combined his interests in retailing and computing, offering a selection of his merchandise on CompuServe and GEnie computer videotext networks.

"It's been a shot in the arm for us," Reinwand said recently. "This is the wave of the future."

continued next page

Dynamic Research Group:

A familiar Anchorage name opens up a new market for Alaska

by Clifford Gerhart

David Gottstein is adding another item to the list of Alaska exports. He claims his company, Dynamic Research Group, is the first business in the nation--make that the world--to offer low-price, real-time stock market information.

"This is the first time this level of sophistication has been offered to a mass market," Gottstein explains. "The purpose was to provide current information at a low cost."

The new enterprise opened for business earlier this year and plans to start a series of national television ads. The Anchorage-based company employs 32.

Here's how it works: Customers can call DRG from anywhere in the United States via 800 and 900 telephone numbers and request information. DRG's computer center receives real-time stock prices and macroeconomic data via a satellite dish. Clients select the information and analysis they want from an automated menu of services. The whole transaction can be done through the computer, but operators are available. You can also request that the information be sent to you as a fax. Clients pay only for the information, not the phone call.

Prices range from $5 for a single stock quotation to $30 for an analysis of all 600 of DRG's stock listing. DRG also will advise clients to buy or sell. And for $7.50 per quarter, the company will automatically send you a fax to alert you if the buy-or-sell status of your stock changes.

continued next page

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Merchant Moves Merchandise by Modem *continued*

Edited and reprinted with permission from Anchorage Daily News

With 1.2 million subscribers worldwide, CompuServe is the largest on-line commercial network. It offers a wide range of services including detailed information on stocks and travel, and educational tools such as an on-line encyclopedia. GEnie, General Electric's network, offers similar services and has about 400,000 subscribers.

Both networks, and others like them, offer electronic "shopping malls" featuring merchandise from big-name national retailers such as J.C. Penney and Land's End. CompuServe's mall is eight years old and has 120 merchants. GEnie began in 1988 and features 50 merchants, among which is a greater proportion of smaller merchants than CompuServe offers.

"If you're going to survive in retail, you can't sit and just open the door and expect people to walk in," he said. "You've got to be different. This gives us the potential to do a lot more."

Both networks are selective in acquiring new merchants, just as a traditional shopping mall would carefully arrange its mix of tenants to offer shoppers a wide variety of goods. The Alaska Peddler fits into both lineups as a unique choice for computer shoppers.

Lisa Johnson is president of Dunhill Management, the Stamford, Conn. based company that manages GEnie's clients. She said the national networks can be a big boost for smaller merchants.

Reinwand agreed. He declined to say how much of a boost his business has seen this winter, but he did say it exceeded his expectations. And between five percent and 10 percent of the new orders come from places beyond North America.

"There's no way we'd be getting any of this foreign business," he said.

Shoppers order on their computer screen, sending their choices in an electronic message to Reinwand's store computer. Orders are filled and mailed within a day.

Alaska Peddler employees communicate by electronic messages to customers to let them know their orders are on the way. And customers use the network to comment on their purchases and the service they got.

Reinwand said many of the customers express surprise with how quickly customers have received their orders.

Alaska is a lot closer than many of them realized, he said.

Dynamic Research Group *continued*

Reprinted with permission from Alaska Business Monthly

DRG's computers handle 600 major stocks and perform over a billion calculations per second. All stock information is updated every five minutes, and the company guarantees that all information is no more than 15 minutes old. Gottstein notes that plans are in the works to make information available to clients through computer networks. DRG also publishes and markets a monthly newsletter, the Portfolio Strategy Update.

According to Gottstein, DRG, which does not sell stock, fills a niche in the financial information market. "If you're using a discount broker, we can give you information and analysis at low cost. If you're using a full-service broker, we're a good way to get a cheap second opinion. In any case, our customers would have to go to a broker to make a buy."

Gottstein says that because he doesn't sell stock, he can give his clients unbiased information. He explains that brokers often get their information from the relationships they form with people in companies whose stock they trade; brokers are therefore reluctant to advise a client to sell. Brokers also have a bias because they only make money when a client buys or sells.

"Alaska has four export industries--government, oil, fishing and timber--that bring money into the state. All the rest of the business that we do in Alaska just moves the money around the state. We're offering a new export to bring money into the state," Gottstein says. He says that more than 99 percent of DRG's customers will be from Outside.

Gottstein founded DRG as a sole proprietorship in 1988 and is now the corporation's president. He formerly served as a legislative aide in Juneau and held several positions with family business Carr-Gottstein Co. Gottstein spent two years in San Francisco getting DRG started, manually logging all the data on a personal computer. He returned to Anchorage in 1990 and has been working for the last three years to implement the stock analysis system.

Says Gottstein, "What's exciting about this is that this is the first time that this service has been offered, and it's being done here in Anchorage, Alaska."

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Young Workers Ages 14 through 19

KNOW YOUR RIGHTS

The child labor laws protect your health and future welfare. They guard you from unsafe activities or exploitation while working.

Alaska minimum wage is $4.75 per hour for all hours worked.

- Tips or gratuities may not be used to satisfy the minimum hourly wage.

Work Permit:

- All minors 14, 15, and 16 years of age must have a work permit. Some employers may also require permits for 17 year-olds under federal law.
- A new work permit must be obtained for each new job.
- If the duties approved on your permit change, it may no longer be valid.
- A parent or legal guardian authorizes you to work. If the parent or legal guardian revokes this authorization, your work permit is invalid.

Youth under 14 may not work except in:

- Newspaper sales and delivery, babysitting, handiwork and domestic employment in or about private homes.
- As a performer in the entertainment industry subject to regulation by the Department of Labor.

Youth 14 and 15 years of age may work:

- Only between the hours of 5 a.m. and 9 p.m.
- No more than six days per week.
- A total of nine hours of school and work combined in one day.
- A total of 23 hours per week outside of school hours (except for domestic work and babysitting).
- May not be employed where alcoholic beverages are served.

Youth 16 and 17 years of age may work:

- No more than six days a week (some exceptions are allowed).
- No other time or day requirements for this age employee.

Working Around Alcohol:

- Youth between 16 and 19 may not be employed where alcohol is served unless the employer has the appropriate license from the Alcohol Beverage Control Board.
- Youth between 16 and 19 must have written authorization such as a work permit, to work on premises licensed to sell alcohol.

Benefits:

- An employee under 18 years of age who is scheduled to work six consecutive hours is entitled to a 30-minute break during the work day.
- A youth under 18 who works five consecutive hours is entitled to a 30-minute break before continuing to work.
- Your employer is not required by law to pay you for holiday pay, sick leave, or vacation. These benefits may be offered as fringe benefits by the employer.

Be Aware:

- An employer does not need a reason to fire you under labor law. If you are terminated for any reason, ALL wages must be paid within three working days.
- Employers may raise or reduce your pay with proper notice.
- You should keep records of the daily and weekly hours that you work.
- The employer must give you written notice of your pay rate.

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Testing Your Career Planning Knowledge Answer Key

Answers to Quiz Yourself, page 5

1- False Many jobs demand specific skills and aptitudes.

2- False People's jobs may influence where they live, with whom they associate, and what they do for recreation.

3- True The average American spends a great deal of time either at work or in work-related activities. It is typical to spend more time at work than with your family or in relaxation.

4- False Your abilities may qualify you for several jobs which may or may not be similar. In addition, it is more the rule than the exception that your interests will change during your life, resulting in different preferences in work.

5- False The average person will change jobs at least six times during his/her lifetime. Frequently a change in jobs will require learning new skills and/or additional training.

6- False Many women continue to work after marriage; also, many return to the work force after child rearing. Women today can expect to work for an average of 25 years.

7- True Apprentices are paid a percentage of current journey-level wages, making this a type of training which pays you, rather than the more typical instance where you pay for training.

8- True Beside those items mentioned, the Department of Labor also provides free occupational testing, employment counseling, and assistance in job placement.

9- True The employment trend indicates that as few as one-fourth of all job openings will require a four-year college degree.

10- False Two-year colleges emphasize skill training for immediate employability, as well as academic programs. They offer a wide range of programs to all segments of the population.

11- False There are a number of ways to determine whether you would like a particular occupation: reading, talking with persons in the field, and actual "hands on" experience are among them.

12- False Establishing a fixed pattern may not account for future opportunities and interests.

13- True Not only does the ending of discriminatory hiring practices enable a more efficient use of human resources, it also allows individuals to follow their own interests in a more fulfilling way.

14- C The skill requirements for jobs rise each year due to advancing technology. The greatest percentage growth will occur in service and technical occupations.

15- C Determining your desires should be the starting point. The other steps mentioned will add direction to this.

16- C Good decision making is based on a broad range of knowledge, and there are many ways to get it. While gaining practical experience by actually doing a job is obviously very desirable, it is not always possible or practical. When you have many interests, reading can provide much of the information you will need.

If you missed 1 or 2, you are a champ! If you missed 3 or 4, you did very well. If you missed 5 or more, you need to learn a lot more about career planning.

Know Your Rights *continued*

- You must receive a statement of earnings and deductions listing all deductions from your wages each pay day.
- You must be paid at least once a month.
- Your employer may not make deductions for cash shortages, breakages, tools or uniforms (some exceptions to this rule are allowed).
- You are entitled to overtime if you work over eight hours in a day or 40 hours in a week.

For more information, contact your nearest Wage and Hour office.

Alaska Department of Labor
Wage and Hour Administration
Anchorage: 269-4900
Fairbanks: 451-2886
Juneau: 465-4839

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YOUNG PARENTS LOOK at the WORKPLACE

by Naomi Stockdale

If you are a young parent, consider some of the many activities and programs throughout Alaska designed to meet your individual needs for education, employment training, and jobs while you raise your family. Whether you are planning to graduate from high school or are working toward your GED and are thinking about your employment options, there may be a program designed just for you.

Many activities and services are offered by local school districts and educational agencies to help you explore and prepare for a wide variety of jobs to support yourself and your family. Some programs are located at alternative school sites or career centers and have flexible schedules. You can take classes for high school credit while you also get on-the-job work experience and have time to spend with your youngster.

Some important parts of these programs are designed specifically for young parents and their children:

- Child care: May be provided at the school site or funding may be available to help you pay for good care for your child while you are at school or work. Programs that offer child care on-site encourage young parents to spend time during the day with their children to practice good parenting skills and learn about child development. We know you want the best care for your child while you are preparing to get a good job.
- Transportation: Is available to help you get to school, to your job and to deliver your child to day care if necessary. Transportation may be by van, bus, or your own car. We don't want lack of transportation to keep you away from the services you need.
- Career Exploration: Individualized career and vocational counseling is provided for each young parent. The Alaska Career Information System (AKCIS) is available to help you develop your own career plan and decide what educational options are best for you. Counselors are there to guide you and provide information on the many educational and work opportunities waiting for you.
- Occupational Skills Training: You may be able to enroll in vocational and academic classes right at your school site, at an alternative school, at a career center, or in a variety of settings, based on the career options you choose. Tutorial services are available if you need some extra help with your classwork. Programs will also help you practice good work habits and find a job when you are ready.
- GED: Many programs offer GED preparation if this is the option you choose, or will direct you to services available in your community.
- Work Opportunities: Flexible scheduling allows you the opportunity to work while you take classes, and perhaps supplement your income. On-the-job training and work experience can give you a head start in the work force and a look at some potential career options.
- Support Groups: Many young parents enjoy the chance to discuss concerns and possible solutions in a supportive setting. Groups often explore ways to manage family life and to get along with family members and friends. Some groups even trade baby clothes and plan picnics and parties together.

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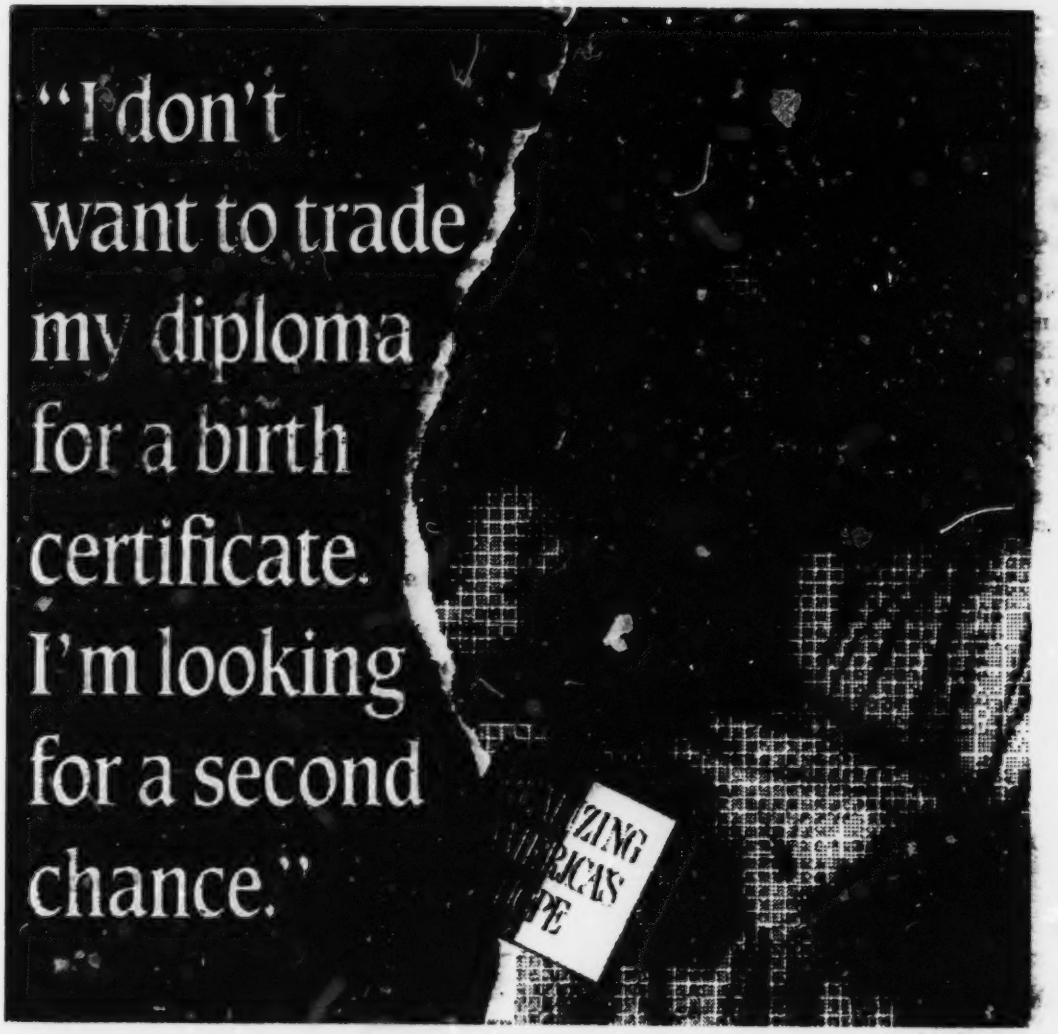

Young Parents Look at the Workplace *continued*

If you are an AFDC/JOBS participant or think you qualify for Aid to Families with Dependent Children, talk to a case worker about the many training and work options open to you right now. Many supplemental services are available to eligible participants. He or she will be happy to point you in the right direction.

If you are attending high school or working on a GED, make a stop at your school counseling office or ask your GED teacher for information.

Remember, there are answers to your questions. There are people to help you get the services and support you may need to provide economic self-sufficiency for yourself and your family.

"I always wanted to be somebody. I can see now that I should have been more specific."

Lily Tomlin

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Need Child Care Help? Parents sometimes find it hard to spend the time away from their children that is necessary to hold or prepare for a job. If you need child care and live in Juneau, Anchorage, or Fairbanks, **Child Care Resource and Referral (R & R) Agencies** can help.

Do You: .

- Need information on finding and keeping high quality child care?
- Want a choice of child care providers that meet your specific needs?

If you answered yes, call or visit your local resource and referral office. Its services may be available to you free of charge or for a small fee, depending on your income.

Anchorage
Child Care Connection
201 Barrow Street Ste 103
Phone 279-5024

Fairbanks
Child Care Options
1401 Kellum Street
Phone 456-2866

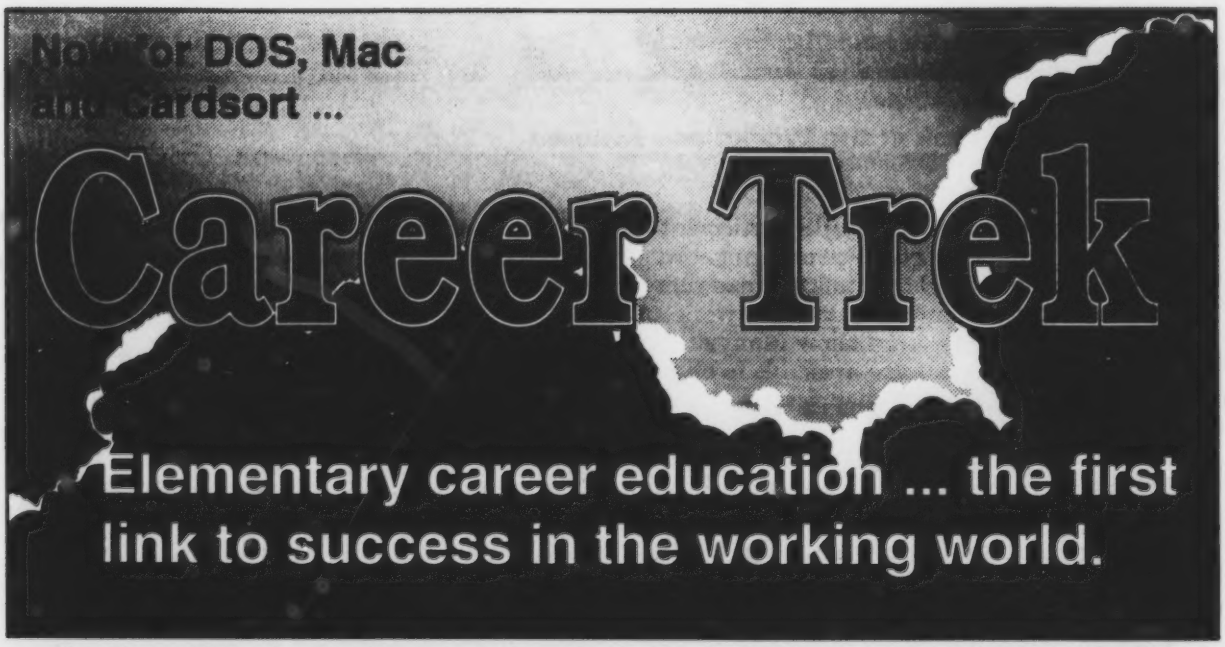
Juneau
Child Care Resources
9095 Glacier Highway
Phone 789-5769

R & R agencies can help:

- Supply information on licensing, vacancies and rates.
- Help you get assistance to pay costs.
- Increase your knowledge of how to choose quality care.
- Save you time.

R & R agencies have a wealth of information about child care providers to help you pick the right one for you. Are you looking for a provider in a particular area of town? Do you have an infant? Want a pre-school program for your toddler? Prefer a home care program where the other children are about the same age as yours? Do you want to know about the providers' education and experience in the field of child care? Or about special services such as transportation and meals and snacks?

R & R AGENCIES HAVE THE ANSWERS!



New From: Alaska Career Information System, 801 W. 10th St., Suite 200, Juneau, AK 99801, 465-2980

STUDENTS BREAK BARRIERS TO NONTRADITIONAL EMPLOYMENT

The Breaking Barriers Award was created by the Alaska Department of Education to applaud and encourage students enrolled in a vocational education program that is nontraditional for their gender. Nontraditional occupations for one gender are those in which 75 percent or more of the workers are the opposite gender.

Alaska students are learning that their gender need not limit the skills they want to gain or the careers they want to pursue. This is the idea behind the annual award. Each year, two students--one high school and one postsecondary--are recognized for outstanding achievement in a vocational education program which is nontraditional for their gender. Award winners receive a $300 grant and the nominating school receives a $3,000 program improvement grant.

The 1993 winners are:

Christine Zimin, Bristol Bay Borough School

In her senior year at Bristol Bay Borough School, Christine took both Building Trades and Woods. She worked on projects to plan out a building and build a sauna and became skilled with different tools. She'd like to have her own business some day and plans to pursue a bachelor's degree in business at Sheldon Jackson College. She also plans on returning to her home town so she can fish in the summers.

Becky Johnston, University of Alaska Fairbanks

Becky received an Associate of Applied Science in both Municipal Fire Control and Wildlands Fire Control. At the time of her award she was a volunteer at Chena Goldstream Volunteer Fire Department. Eventually, she would like to work as a forestry technician for the state of Alaska. Becky writes, "It is important to me that other women, like myself, have the opportunities to seek employment or volunteer services in the area of Fire Science."

For more information on the Breaking Barriers Award, contact Naomi Stockdale at the

Alaska Department of Education,
Office of Adult and Vocational Education,
801 West 10th Street, Suite 200,
Juneau, AK 99801-1894
or call
(907) 465-8728.

Breaking the Bonds of Traditional Employment Pays Off

by Molly Merritt

"When I was in my teens, carpentry was something girls didn't do. To be paid for something you enjoy doing...I think it's just outrageous."

Sylvia Skan-Ahlalook
Carpenter, Juneau

"No matter what this world can take away from me, it can't take away my education and knowledge."

Julie Harris
Diesel Mechanic, Power Plant Operator, Valdez

"I love welding. It's good to be in it for the money, but you've got to know what you're doing. You've got to have a strong mind and a strong will."

Katie Stettinger
Welder, Nome

"I am very grateful that programs such as JTPA exist, not only to help myself, but others who wish to succeed in male dominated professions."

Carol Kateinikoff
Heavy Equipment Operator, Mat-Su Valley

The Job Training Partnership Act (JTPA) is a state and federally funded program designed to help female and male, youth and adults, become economically independent. The JTPA program can pay for the training and experience you need to build a career. Whether this is your first attempt to enter the job market or you want to return....JTPA can help you pick an occupation that doesn't follow the old rules of "women's work" and "a man's job." Break the bonds of tradition and join the job market of the 90s!

If you want a career that fits you as a person and provides the financial security you want, contact the JTPA office nearest you. Today!

Combine your interest and abilities with good pay and you have a recipe for success. If it's education you need, on-the-job training, or any of the other services offered, JTPA staff will help you move into the future.

Selected Nontraditional* Occupations Alaska 1990

Women	Men
Automobile Mechanics	Bank Tellers
Carpenters	Bookkeeping, Accounting & Auditing Clerks
Civil Engineers	Dental Hygienists
Dentists	Dieticians
Electrical & Electronic Technicians	Librarians
Electricians	Nursing Aides, Orderlies & Attendants
Firefighting Occupations	Registered Nurses
Forestry & Conservation Scientists	Secretaries
Plumbers, Pipefitters & Steamfitters	Speech Therapists
Stationary Engineers	Teachers' Aides
Surveying & Mapping Technicians	Teachers, Prekindergarten & Kindergarten
Timber Cutting & Logging Occupations	Typists

**Nontraditional occupations for one gender are those in which 75 percent or more of the workers are the opposite gender. Source: 1990 Census.*

JOB TRAINING

Alaska Department of Community & Regional Affairs
Job Training Partnership Office
333 W. 4th Avenue, Suite 220
Anchorage, AK 99501-2341
(907) 269-4650

Anchorage/Mat-Su Borough / Consortium Service Delivery Area

Municipality of Anchorage
Career Development & Training
825 L Street
PO Box 196650
Anchorage, AK 99519-6650
(907) 343-6560

Human Resource Company
1075 Check Street, #105
Wasilla, AK 99645
(907) 373-5872

Fairbanks JTPA

Fairbanks Private Industry Council
500 First Street
Fairbanks, AK 99701
(907) 456-5189

Alaska Statewide Service Delivery Area

Alaska Department of Community & Regional Affairs
Rural Development Division
(907) 465-4891

Region I

150 Third Street
Juneau, AK 99801-1291
(907)465-5548

Region II

1001 Noble Street
Fairbanks, AK
(907) 451-2160

Region III

Old Federal Building, 2nd Floor
PO Box 41
Nome, AK 99762
(907) 443-2274

Region IV

BNC Complex, Room 210
PO Box 348
Bethel, AK 99559
(907) 543-2875

Region V

333 W. 4th Avenue, Suite 220
Anchorage, AK 99501-2341
(907) 269-4592

ODDS ON BECOMING A PROFESSIONAL ATHLETE

The following chart shows the number of athletes participating each year in high school and college and the number who enter major league professional sports yearly in the United States. These figures are from *Career Opportunities News*, Winter 1988.

Number of Participants

Sport	High School	College Division I	New Major League Pros/ Year	Odds of HS to Pro
Football	956,500	50,757	192	5,000 to 1
Basketball	505,100	13,931	48	10,000 to 1
Baseball	393,905	22,304	300	1,300 to 1
Hockey	23,500	4,691	20	1,200 to 1

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JOB CORPS: Train for Your Future

The Job Corps gives young men and women a fresh start and a new beginning. It ties together education and job training experiences based on individual abilities and interests. It is a residential education and job training program for young people who need multiple services.

Job Corps offers training and employment services:

- GED or high school classes
- Vocational skills training
- Social skills training
- Driver's education
- Leadership training
- Health education training
- Advanced career training at Mat-Su Valley College
- Preplacement work experience
- Placement services

Job Corps offers pay and benefits:

- Residential dormitory facilities including room and meals
- Basic medical and dental care
- Transportation to and from the center
- Annual home visit
- Monthly spending allowance
- Clothing allowance
- Allotment for dependent children
- Personal and vocational counseling
- Recreational programs
- Money for each month in Job Corps to be used when student goes to her or his first job (for students who remain in Job Corps seven months or longer).

Areas of study include:

- Building and apartment maintenance†
- Business occupations
- Carpentry‡
- Culinary arts
- Early childhood education
- Health care occupations
- Heavy equipment operator‡
- Painting‡
- Water/waste treatment operator

Additional training skills are available at Job Corps Centers in Washington and Oregon.

† *National Homebuilders' Association*
‡ *Union programs, minimum age, 17 years*

Who is eligible for Job Corps training?

All youth ages 16-24 and considered low income who are:

- residents of the United States
- in need of training to get a job
- out of school and/or unable to maintain regular school attendance

Applicants must have no history of serious health or behavioral problems.

Rules, Regulations and Responsibilities

Like any program, Job Corps has rules and regulations. They are easy to understand and live with. A student handbook explains all the rules. These rules and regulations are similar to those necessary for getting and keeping a job.

To find out more about the Job Corps contact:

Job Corps
Recruitment & Placement
560 East 34th Avenue,
Suite 202
Anchorage AK 99503
562-6200 or
1-800-478-0531 (toll free)

A new Alaska Job Corps Center is scheduled to open in Palmer in early 1994. The training center will be able to serve 250 youth, ages 16-24. It will include full residential accommodations. Limited on-campus single parent apartments and child care facilities will be available.

Private Sector:

ALASKA'S TOP 25 EMPLOYERS

Rank	Firm Name	Employment	Headquarters or Largest Work Site	Business Activity
1	Carr-Gottstein Foods	3,146	Anchorage	Retail-grocery
2	ARCO Alaska	2,691	Anchorage	Oil & Gas Production
3	Providence Hospital	1,959	Anchorage	Hospital
4	Trident Seafoods	1,415	Akutan	Seafood Processing
5	BP Exploration (Alaska)	1,388	Anchorage	Oil & Gas Production
6	Alyeska Pipeline Service Co.	1,325	Anchorage	Pipeline
7	National Bank of Alaska	1,153	Anchorage	Banking
8	Fred Meyer	1,108	Anchorage	Retail-general merchandise
9	VECO	1,038	Anchorage	Oil Field Services
10	Alaska Airlines	996	Anchorage	Air Carrier
11	All Alaskan Seafoods	954	Kodiak	Seafood Processing
12	MarkAir	948	Anchorage	Air Carrier
13	Ketchikan Pulp Company	917	Ketchikan	Pulp & Lumber Products
14	Safeway Stores	904	Anchorage	Retail-Grocery
15	Unisea	904	Unalaska	Seafood Processing
16	Icicle Seafoods	807	Petersburg	Seafood Processing
17	First National Bank ofAnchorage	789	Anchorage	Banking
18	Alascom	752	Anchorage	Telephone Communications
19	Westmark Hotels	743	Anchorage	Hotel
20	Fairbanks Memorial Hospital	737	Fairbanks	Hospital
21	Alaska Pulp Corp.	704	Sitka	Pulp & Lumber Products
22	Alaska Regional Hospital	609	Anchorage	Hospital
23	Sears Roebuck & Co.	588	Anchorage	Retail-general merchandise
24	Union Oil of California	581	Anchorage	Oil & Gas Production
25	Federal Express	568	Anchorage	Air Courier Services

Source: Alaska Economic Trends, August 1993

"There are more dentists in the West than cowboys, but no one writes about the dentists."

Wallace Stegner, best-selling author of the West

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Tech Prep: LINKING EDUCATION WITH... ....THE WORKPLACE

Competing in today's global economy requires a workforce with technical skills and the ability to work as a team.

Workers also must have the ability to quickly adapt to changes. Tech Prep programs are designed to prepare students for this type of working environment.

What Is Tech Prep?

Tech Prep is an educational program which links the last two years of high school to postsecondary training in colleges, vocational schools, or apprenticeship programs. In addition to a core of college preparatory classes in math, science, communications, and technical subjects, actual work experience may be included. In many cases, there are 10 or more hours of paid employment during the school year and full-time summer employment.

Academic course work and applied study lead to a certificate or associate degree. This can be used as a foundation for a bachelor's degree or as credentials for entry into skilled employment. In many cases, Tech Prep students are hired by the company in which they have completed some type of on-the-job training.

When to Start

A decision to enter Tech Prep must be made by the end of 10th grade in order to coordinate the junior and senior years of high school with the two years of postsecondary training.

Students who will be attracted to Tech Prep are usually those who enjoy using math and science to solve technical problems. They like learning through hands-on application of knowledge and prefer courses with technical content such as data processing. Typically, they have good attendance records and are willing to work to achieve their goals. They are aware that technical careers have higher-than-average pay.

Graduation Requirements

Students must satisfy requirements for high school graduation. At the end of the postsecondary training students will receive either a certificate or an associate degree, depending on whether an apprenticeship program, vocational school, or college is used to complete their career preparation studies.

SUMMER JOB SCENE

What's a young worker to do?

Largest Occupations*In Rural and Urban Alaska

Ages 15-21 Rural Alaska	Ages 15-21 Urban Alaska
Cannery Workers	Sales Clerks
Manual Laborers	General Office Occupations
Sales Clerks	Food Counter Workers
General Office Occupations	Cashiers
Janitors/Cleaners	Food Preparation
Cashiers	Misc. Food & Beverage
Waiters/Waitresses	Counter Clerks
Construction Laborers	Manual Laborers
Food Counter Workers	Salespersons
Misc. Food and Beverage	Stockers and Baggers
Most Common Types of Work:	
Labor • Sales • Service	

** Summer 1992 employment figures Rural as defined is all geographic areas within the state excluding Anchorage, Fairbanks, and Juneau Boroughs; which are considered urban. Source: Alaska Department of Labor / Research & Analysis*

Opportunities In Alaska

Tech Prep is still a relatively new concept. Areas in the state where Tech Prep programs currently are located include:

Mat-Su Area

Associate degree Tech Prep programs in Office Management Technology are available to Matanuska-Susitna Borough School District students. Eleven high school credit hours may be counted as college credits.

Participating high schools:
Colony Senior High School
Houston Junior/Senior High School
Palmer High School
Susitna Valley High School
Wasilla High School

Fairbanks Area

An associate degree in Applied Small Business/Computer Applications is available to Delta/Greely School District students. Future programs may include: Fire Science, Renewable Resources, Office Management Technology, and Aviation Airframe and Power Plant. Twelve high school credit hours may be counted as college credits.

Participating high school:
Delta Junction High School
(students in other schools may also be eligible)

Kenai Area

Association and certificate degree programs are available to Kenai Peninsula School District students. The number of high school credits that can be transferred to college varies by program.

Associate degree Tech Prep programs include:

- Computer Electronics
- Instrumentation Technology
- Office Management Technology
- Petroleum Technology
- Small Business Administration

Certificate degree Tech Prep programs include:

- Building Maintenance Technology
- Commercial Baking Technology
- Emergency Medical Technician Training
- Food Service Technology
- Forest Technology
- Gas and Diesel Mechanics
- General Clerical
- Marine Technology
- Mechanical Technology
- Office Occupations
- Pipe Welding
- Welding Technology
- Word Processing/Information Processing

Participating high schools include:

- Homer Senior High School
- Kenai Central High School
- Nikiski Junior/Senior High School
- Seward High School
- Skyview High School
- Soldotna High School

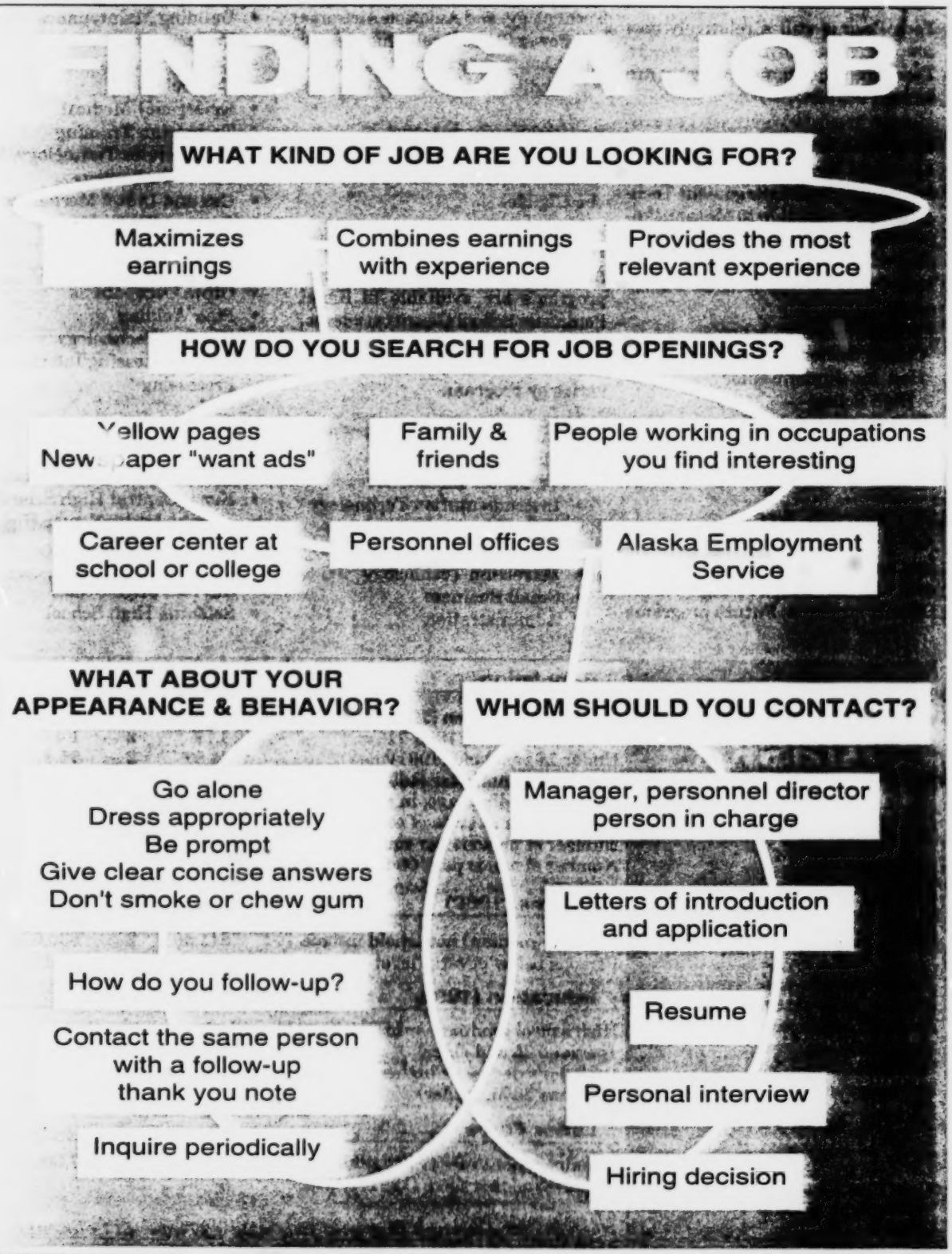
How Does Alaska Compare?

There's little that's "average" about Alaskans! They're younger than the residents of other states, were usually born "Outside," and are more likely to be male than female. They enjoy higher incomes and boast higher than average education levels. The percent of Alaskans who are unemployed tends to be higher, too, than in the rest of the U.S.

Population	Alaska	Rank†	U.S.
Resident population (1991)	550,000	48	252,177,000
Percent increase, 1990-91	3.7%	2	1.4%
Under 18 years old (1991)	31.6%	2	25.8%
65 years old and over (1991)	4.2%	50	12.6%
Average (median) age, in years (1990)	29.4	50	32.9
Persons born in state of residence (1990)	35.6%	49	67.1%
Number of persons per square mile (1990)	1.0	51	70.3
Number of males per 100 females (1990)	111.4	1	95.1
Income (1989)			
Average (median) household income	$41,408	2	$30,056
Persons below poverty level	9.0%	44	13.1%
Education (1990)			
High school graduate or higher (persons 25 and older)	86.6%	1	75.2%
Bachelor's degree or higher (persons 25 and older)	23.0%	12	20.3%
Labor Force			
Unemployment rate (1992 annual average)	9.1%	2‡	7.3%
Females in labor force (1991)	64.9%	3	57.3%

†Includes 50 states and District of Columbia ‡Tied with California

Job Search:


FINDING A JOB
WHAT KIND OF JOB ARE YOU LOOKING FOR?
Maximizes earnings
Combines earnings with experience
Provides the most relevant experience
HOW DO YOU SEARCH FOR JOB OPENINGS?
Yellow pages
Newspaper "want ads"
Family & friends
People working in occupations you find interesting
Career center at school or college
Personnel offices
Alaska Employment Service
WHAT ABOUT YOUR APPEARANCE & BEHAVIOR?
Go alone
Dress appropriately
Be prompt
Give clear concise answers
Don't smoke or chew gum
How do you follow-up?
Contact the same person with a follow-up thank you note
Inquire periodically
WHOM SHOULD YOU CONTACT?
Manager, personnel director person in charge
Letters of introduction and application
Resume
Personal interview
Hiring decision

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Job Search:

STEPPING STONES TO EMPLOYMENT

People look for jobs for many different reasons. Some people are entering the labor force for the first time. Others may have been laid off and wish to reenter the work force. Some people want or need to relocate. And there are people who may dislike their present job and want to get a different job.

Finding the right job takes good planning and preparation. It takes organization, a lot of time and energy and good decision making. Keep in mind as you begin your job search that you are promoting a productive worker. You have abilities that an employer can use. You are marketing your skills, your ability to learn, and your willingness to help an employer succeed. Seeking employment is a sales job. Maintaining a positive outlook throughout your job search is important.

Job Search Methods

The following is a listing of the most common job search methods according to the U.S. Department of Labor:

- apply directly to an employer
- complete a Civil Service test
- answer local newspaper ads
- use your school placement office
- ask friends about jobs
- ask your teachers or professors
- ask relatives about jobs
- apply to a union hiring hall
- use a private employment agency
- place an ad in a local newspaper

It is nice to know what the most effective methods of job search are, but the most important thing to keep in mind is that successful job-seekers use as many of these methods as they can.

Writing a Letter of Introduction

For job-seekers, a letter of introduction can be an effective way to make the first contact with an employer. The letter, if it is well written and researched, will command more attention than a resume. But writing a good letter requires research and originality. The letter must show interest and qualifications if it is to bring a reply.

September 2, 1993

Ms. Sharon Thompson
Personnel Director
Crest Publications, Inc.
3400 Industrial Way
Anchorage, Alaska 99513

Dear Ms. Thompson,

I read with interest an article in *Publishers Monthly* about your company's plans to start a new magazine for outdoor recreationists. The article mentioned that a major part of each issue would cover wilderness area preservation efforts.

For the past two years I have been deeply involved in resource management and land-use planning. During this time I served on a citizens' advisory committee that recommended management practices for U.S. Forest Service lands. I have also done free-lance writing and publications design for the Nature Conservancy and other groups concerned with resource protection.

My first-hand knowledge of preservation efforts in the Northwest, plus my writing and publications experience, may be of help to you on the new magazine. Would it be possible to arrange a time when I could visit you?

Sincerely yours,
(leave four spaces for a signature)

Thomas M. Hunter
344 41st Court Southeast
Sitka, Alaska 99835
Phone: (907) 747-5678

The Resume

Your resume is a summary of your educational background and work experience. Keep it short. Make sure it is typed neatly and there are no spelling or grammatical errors.
Most employers will agree a resume:

- **should include a single goal or objective**
- **should summarize your education, work experience, and skills**
- **should be neatly typed using a typewriter or word processor**
- **should be no more than one page in length**

Sample Resume: Recent Graduate

Resumes for recent high school or college graduates can emphasize academic record, summer and part-time jobs, and interests. Relating educational experiences, work experience, and interests to the type of work desired is an effective way to present your qualifications. This resume is also useful for people with little or no work experience.

The following is a sample resume for a recent college graduate.

ROBERT T. GILBREATH
5021 West Burney Street
Soldotna, Alaska 99669
907-262-3232

OBJECTIVE	Entry-level position in a photographic processing shop.
EDUCATION	Soldotna High School, Soldotna, Alaska. Diploma, 1993. Alaska Vocational Technical Center, Seward, Alaska. Six-week workshop in basic camera repair.
EXPERIENCE	Temporary Sales Clerk. Wright's Dept. Store, Soldotna, Alaska 99669. June 1993 to September 1993. Set up floor and counter displays. Demonstrated and sold household appliances. Maintained receipts. Photography Club. Photographer for student newspaper and yearbook. September 1991 to May 1993.
AWARDS	First-place award in photography competition sponsored by *Alaska Magazine*, June 1992.
INTERESTS	Portrait photography, frame making, repairing old cameras.

REFERENCES

Dan Tucker Manager Wright's Department Store (907) 262-5436	Sue Stiles Photography Club Advisor Vocational Technical Center, Seward, Alaska (907) 224-5678

"Good idea, boss!"

Homer Simpson of TV's "The Simpsons," passing on to his son the phrase that was most helpful during his working life.

Tips for the Recent Graduate's Resume

Tip 1 Work experience and education should be presented in a way to best support your skills for the job objective.

Tip 2 You may want to list semester hours and grades when better than average. Employers may be impressed by your ability and drive.

KRIS M. JENKINS

School Address:	Home Address:
3211 Providence Drive Anchorage, AK 99508 (907) 786-1800	925 Mallard Drive Palmer, AK 99645 (907) 745-3892

OBJECTIVE	Entry-level Electronics Technician
EDUCATION	University of Alaska Anchorage, Anchorage, AK 99508 Bachelor of Science, Electrical Engineering Electrical Engineering Teachers Aide Received 3.81 Grade Point Average Passed Engineering-in-Training Examination, May 1993
RELEVANT COURSES	Electronics I-II-III Electromechanical Energy Conversion Electromagnetic Principles I-II-III Linear Circuit Analysis & Linear Systems Linear Feedback Systems Communication Theory & Technical Writing Dynamics & Thermodynamics Applied Mechanics
EXPERIENCE	Assistant Project Engineer Channel Timber, Incorporated June 1992 to September 1992

Projects completed included:
Constructed a 35,000 pound per hour wood-fire boiler
Assembled a 12 tie per minute boring mill
Disassembled a 10 tie per minute cross-tie separator

These projects afforded opportunities to work with professional engineers, managers, sales people, contractors, skilled and unskilled laborers (union and non-union).

INTERESTS	Member of corporate sports teams Enjoy programming using ASSEMBLY and COBOL computer languages
MEMBERSHIP	EET Computer Club, Alaska Travel Association
REFERENCES	Available upon request.

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Tip 3 Extracurricular activities are important if they relate to the job objective, show a well-rounded personality, or demonstrate positive social abilities.

Tip 4 Mention scholarships, awards, or honors you have received.

Tip 5 If you are a college graduate, use the most advanced institution from which you have graduated unless you have an advanced (master's or doctoral) degree or a professional degree such as medicine or law. With advanced and professional degrees list all degrees--professional, graduate, and undergraduate.

January 3, 1993

Mr. Kenneth D. Wilson
Personnel Manager
Kwick Litho Service, Inc.
145 West Riverview
Valdez, Alaska 99686

Dear Mr. Wilson:

I am submitting my resume for the offset press operator position advertised yesterday in the *Gazette-Times*.

I am eager to work for a prominent, full-service printing operation such as Kwick Litho Service. Currently, I am enrolled in graphic production classes at Prince William Sound Community College. My course work has included a full range of printing tasks including design, three-color off-set and web press operation, and the use of direct-image plates.

After completing these courses next month, I would like the opportunity to put my training into practice in a position such as the one you have advertised.

Would it be possible to schedule a time when I might visit you? I would like to talk with you about my qualifications and my interest in working for Kwick Litho Service.

Sincerely,

(skip four spaces for a signature)

Daniel Heidelburg
234 West Maple
Valdez, Alaska 99686
Phone: 907-835-6789

"Outside a dog, a book is a man's best friend. Inside a dog, it is too dark to read."

Groucho Marx

Dynamic Verbs For Resumes:
Words That Work

A Letter of Application

A letter of application is probably one of the best ways to get an interview. When you write a potential employer to ask for an interview, you may want to send a resume with your letter. Your letter should be neat, easy to read, and have no mistakes. Type neatly on white letter-size bond paper. Use correct spelling, grammar, and punctuation. Address the letter to a specific person and describe exactly the job you want. Be clear and brief, but give enough information to interest the employer in your qualifications for the job.

Sample Interview Questions

The following are commonly asked questions that employers may ask during the course of an interview. Think through how you can best answer each question. For technical and professional work, you may be asked detailed questions targeted to the work required. Such specific questions are not included here.

1. **Tell me a little bit about yourself.**
2. **Why do you want to work here?**
3. **What are your strengths?**

continued next page

4. **What are your weaknesses?**
5. **Why should you be the one hired for this job?**
6. **Tell me about your previous job.**
7. **What were your responsibilities at your previous job?**
8. **What was the best part of your previous job?**
9. **Why do you want to change jobs now?**
10. **Describe your education.**
11. **What are your goals?**
12. **Do you have any questions?**

Troublesome Questions

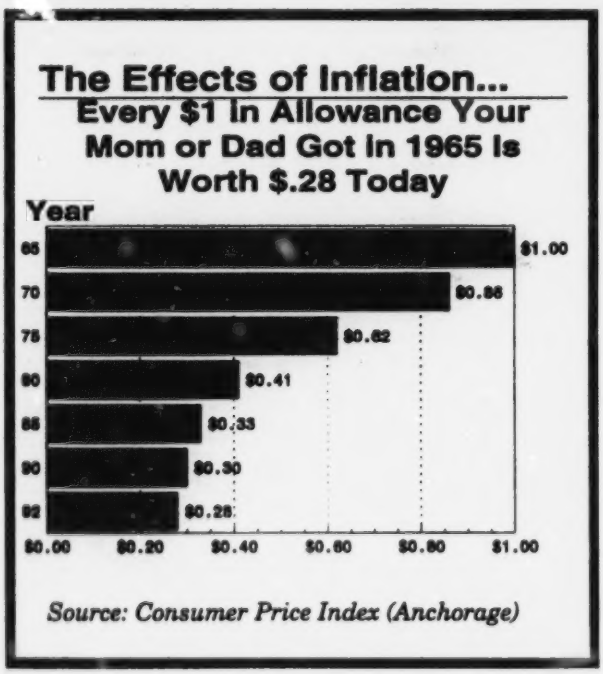
Having a strategy for handling potentially troublesome questions, such as firings, health problems, work gaps, or age, is very important.

- If asked, acknowledge problems briefly and in terms that will put you in as positive a light as possible.
- If possible, put your difficulties in the past. Contrast "then" and "now," show that you've overcome problems, and learned from mistakes.
- Don't over explain. Be brief and end on a positive note that will lead the employer into a subject in which you have more strength.
- Mainly, **disarm the interviewer's fears** about what may happen if you are hired. **Don't wave any red flags at the interviewer that suggest you're going to be a problem.**

Interview Someone Whose Job Interests You

1. **Describe the duties and responsibilities of your job.**
2. **What hours do you usually work?**
3. **What is the outlook for this kind of job?**
4. **What level of education is required for this job?**
5. **What are the groups to which you belong in connection with your work?**
6. **What do you like most about your job? Least?**
7. **What special skills are required for this job?**
8. **Does the job have a regular routine? Is there much variety?**
9. **Are there any special physical demands?**
10. **Is there a minimum age requirement for this job?**
11. **What previous jobs did you hold that helped prepare you for this career?**
12. **What job could you advance to from your present position?**
13. **How many other people do you work with in your job?**
14. **Are there any special materials, equipment, tools, machinery, etc. that you have to know how to use in your job?**
15. **Do you have to use numbers, reports, or statistics in your job?**
16. **What personal qualities does a person need for this job?**
17. **How does the company treat its employees?**

Source: USA Careers



Source: Consumer Price Index (Anchorage)

CAREER QUESTIONS TO ASK

by Paul Williams

The job-hunting process starts long before you look at the first want ad or go to the first job interview. It starts by taking a good look at yourself and your possible career choices. Too many people commit themselves to a career without doing enough research. Spend a few hours in a local library, campus career center, or, best of all, talking to others who have made a career choice in the same field. Try asking questions like:

1. What are the specific training or educational requirements? What kind of training? How much education? Where are the schools located? What will it cost?
2. What other qualifications are needed? Does the career demand a certain trait, skill, or aptitude I do or do not have?
3. What are the duties of the job? Will I like them? Are they the sort of activities I could do over a long period of time?
4. What is the work environment? Is the occupation only in a factory? Office? Outdoors? Indoors? What about the hours?
5. What is the earnings potential? Will I be able to make enough money to satisfy myself? Will I reach my maximum earnings too soon?
6. Where could I find such a job? Only in a big city? Would I like the geographical location?
7. What is the employment outlook? Good? Poor? Will there be opportunities after I complete my education or training?
8. Will this career permit me to live the lifestyle I seek? How much freedom will I have? What are the pressures? Will the job be at least somewhat in harmony with my personal values?
9. Does this career mean I will have to work for a large organization? A small one? For myself?
10. Will I be successful? Will the career allow me to live up to my potential? Or will I be underemployed in a few years?

Where You Can Find Some Answers

- Alaska Employment Service
- AKCIS (Alaska Career Information System)
- High school or college counselors
- People who work in the occupation
- Libraries and bookstores

Look for such books as:

What Color Is Your Parachute? by Richard Bolles, Ten Speed Press, Berkeley, CA (updated annually).

Occupational Outlook Handbook, developed by the U.S. Department of Labor Bureau of Labor Statistics, JIST Works, Inc., Indianapolis, IN (1992).

Resumes that Knock 'em Dead, by Martin Yate, Bob Adams,Inc., Holbrook, MA (1993).

The Perfect Cover Letter, by Richard Beatty, Wiley & Sons, New York, NY (1989).

13th Gen: Abort, Retry, Ignore, Fail?, by Neil Howe and Bill Strauss, Vintage Books, New York, NY (1993).

Megatrends 2000 by John Nesbitt and Patricia Aburdene, Morrow & Co., New York, NY (1990).

Starting on a Shoestring: Building a Business Without a Bankroll, by Arnold S. Goldstein, Wiley & Sons, New York, NY (1991).

"If you don't know where you're going, you will probably end up somewhere else."

Laurence Johnston Peter
Author of The Peter Principal

If You Are Ready to Go to Work, They Are Ready to Help You!

Since 1938, the Alaska Employment Service has been the state's primary labor exchange--dedicated to bringing employers and job seekers together. Last year, the Alaska Employment Service placed over 20,000 Alaska residents in a broad range of occupations, at various wage and salary levels. More than 25 percent of Alaska's work force relies on Employment Service programs to help secure employment. This service clearly reduces unemployment, helps meet employers' work force needs, and improves the state's economy.

Primary employment services available include:

- placement service for employers and job ready applicants
- recruiting, screening, and referring applicants
- career counseling testing services
- providing labor market information
- unemployment insurance work test

Nineteen offices around the state are electronically linked to share information about job orders, available applicants, economic conditions, and other relevant information used in the labor exchange process. The Alaska Employment Service also helps job seekers find work in other states.

If you haven't been to one of the Alaska Employment Service offices lately, you really should drop by and see what they can do for you! See the back page for the address and phone number of your nearest office...

Services to Job Seekers

- assessment of skills and qualifications
- vocational counseling, guidance, and career planning
- aptitude, interest, and skills proficiency testing
- help with job seeking skills, interviewing, and resumes
- referral to employers with job openings
- help in applying for state and federal jobs
- locating jobs available in other areas
- job development for individuals
- referral to training programs or other supportive services
- labor market information
- specialized placement efforts for veterans, persons with disabilities, youth, older workers,

QUIZ YOURSELF:

Alaska Economic Facts

1. The average annual Alaska wage in 1992 was:

a. $29,932 b. $31,416
c. $33,134 d. $40,618

2. The average sales price for a house in Alaska in 1992 was $134,200. To purchase this house, the buyer(s) needed an annual income of at least:

a. $28,513 b. $34,989
c. $39,715 d. $41,616

3. In Alaska, for every $1 that men earn, women earn:

a. 42¢ b. 61¢ c. 84¢ d. $1.02

4. In a wage survey of Alaska occupations, the three top-paying (by hourly wage) were:

a. Lawyers, Petroleum Engineers, Dental Hygienists
b. Financial Managers, Pharmacists, Mining Engineers
c. Architects, Geologists, Insurance Adjusters

Answers

1. (c) Self-employed persons not included.
2. (d) Assumptions: 15% down payment, 7.94% interest rate, 30-year mortgage.
3. (b) 1990 data.
4. (a) Average hourly wages were: lawyers, $33.09; petroleum engineers, $28.50; and dental hygienists, $28.35. Data on 173 occupations appear in the [illegible] of Labor publication Alaska Wage [illegible] of self-employed persons and [illegible] federal, state, [illegible] government are [illegible]

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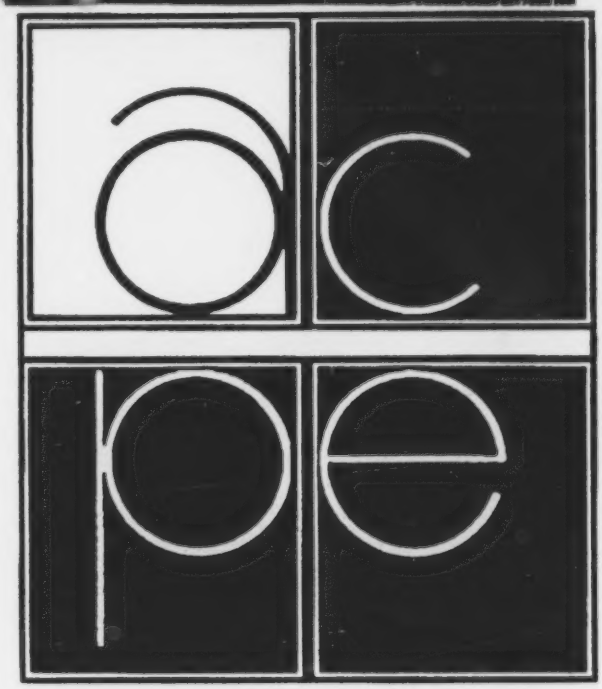
unemployment insurance claimants, and dislocated workers
- help resolving job or wage complaints

Services to Employers

- access to the largest pool of job seekers in Alaska, both locally and statewide
- pre-screened job seekers tailored to the employer's individual needs and job specifications
- recruiting for workers in other areas when qualified workers are not available locally
- pre-tested clerical personnel (upon request)
- targeted JOBS tax credits for eligible employees
- time savings for employer by pre-screening job seekers
- assistance with affirmative action recruitment
- local and statewide labor market information
- special assistance in hiring youth, minorities, persons with disabilities, older workers, and other special target groups
- information on labor laws
- assistance in developing personnel policies and job descriptions

Brought to you by the Alaska Commission on Postsecondary Education:



Loans for:

Full-time students
Half-time students attending in Alaska
Rural students in Teacher Education Degree Programs
Loans for Fisheries Science Degree Programs

Grants for:

Low-income students in their first undergraduate degree program

The Commission also administers the **Western Undergraduate Exchange**, the **Western Regional Exchange** and the **Professional Student Exchange Programs** providing reduced tuition at many 2-and-4 year schools in the west.

For information about these and other state student aid programs, write or call:

Alaska Commission on
Postsecondary Education
P.O. Box 110505
Juneau, Alaska 99811-0505
(907) 464-2962

Disney CEO Michael Eisner recently sold his stock for a $200 million profit. Not bad for a Mickey Mouse Operation.

-anonymous-

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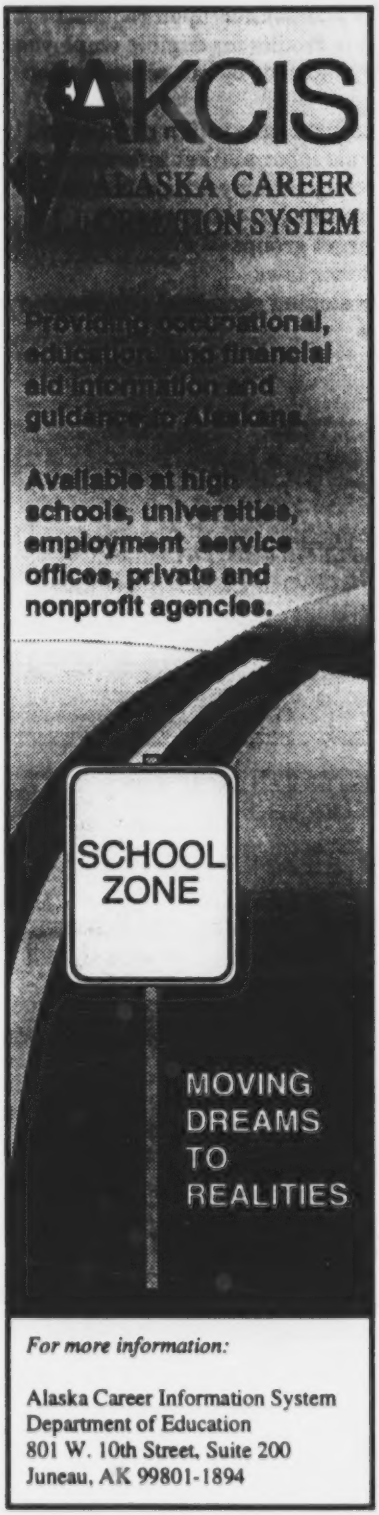

AKCIS
ALASKA CAREER
INFORMATION SYSTEM
Provides occupational, educational and financial aid information and guidance to Alaskans.
Available at high schools, universities, employment service offices, private and nonprofit agencies.
SCHOOL ZONE
MOVING DREAMS TO REALITIES

For more information:

Alaska Career Information System
Department of Education
801 W. 10th Street, Suite 200
Juneau, AK 99801-1894

High School Seniors Summer Internships in Washington, D.C.

An exciting opportunity to work in Washington, D.C. is available to a limited number of Alaska's graduating senior class of 1994.

Each year, both Alaska's U.S. senators—Ted Stevens and Frank Murkowski—provide graduating high school seniors a rare opportunity to live and work in the nation's capital through an exciting four-week summer internship program. Selected individuals will work alongside the senators and their staff helping with daily assignments, attending committee hearings and business meetings, and working on the Alaska newsletter. You may even be asked to accompany your senator during formal and informal meetings and social events!

Interns are encouraged to hear the many speakers who come to Capitol Hill during the summer. In addition, visits to historical sites and significant events in and around the Washington area are encouraged.

The main purpose of the intern program is to provide an opportunity for the participants to gain a greater understanding of their national government as well as an awareness of the needs and concerns of the citizens living in Alaska.

A round-trip ticket is normally provided between Alaska and Washington, D.C. Interns receive a stipend of $250 per week, for a total of $1,000 (minus taxes). Interns must pay for food, lodging, local transportation and personal expenses. Accommodations in college dormitories are usually available.

Don't hesitate in applying for this unique educational experience. The deadline for applying for the summer 1994 program is April 1. For an application or for more information, contact the offices of:

The Honorable
Frank Murkowski
United States Senate
222 West 7th Avenue #1
Anchorage, AK 99513-7570
(907) 271-3735

or

The Honorable Ted Stevens
United States Senate
222 West 7th Avenue #2
Anchorage, AK 99513-7569
(907) 271-5915

"Do what you can, with what you have, where you are."

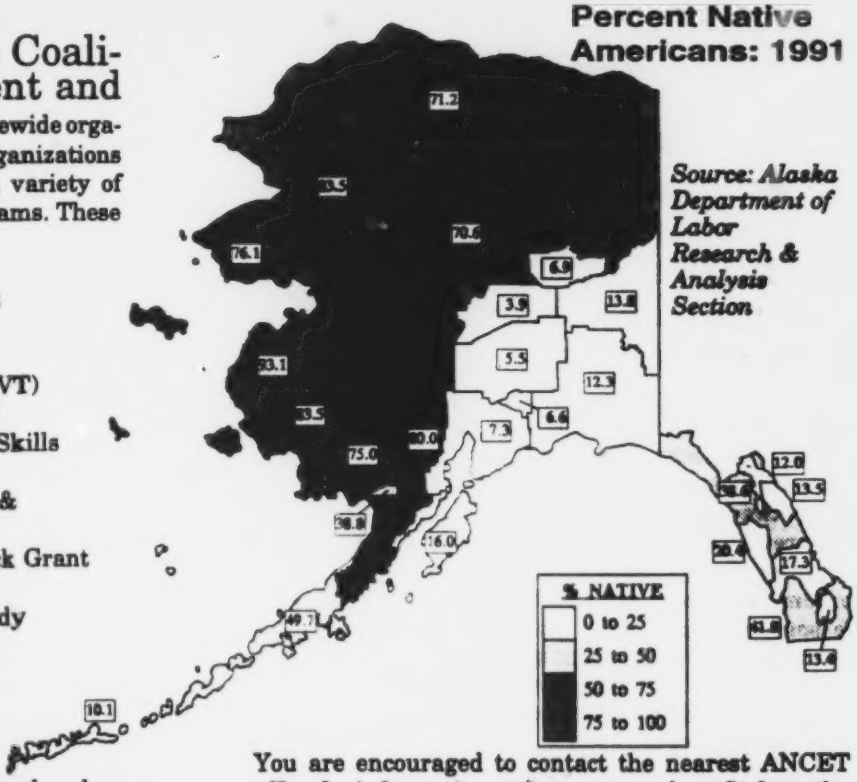
Theodore Roosevelt

Native Employment Network

The Alaska Native Coalition on Employment and Training (ANCET) is a statewide organization of 12 Alaska Native organizations and tribes which administer a variety of employment and training programs. These include:

- Job Training Partnership Act (JTPA)
- Direct Employment (DE)
- Adult Vocational Training (AVT)
- Adult Basic Education (ABE)
- Job Opportunities and Basic Skills (JOBS) and Child Care
- Summer Youth Employment & Training (SYETP)
- Child Care Development Block Grant (CCDBG)
- Internships and Work Study Opportunities

ANCET clients must be Alaska Natives and economically disadvantaged, unemployed, underemployed or recipients of Aid to Families with Dependent Children (AFDC). ANCET represents Alaska Native organizations and tribes throughout the state and serves Natives who live in the larger urban areas as well as those who live in small bush villages.



Source: Alaska Department of Labor Research & Analysis Section

You are encouraged to contact the nearest ANCET office for information on how you can benefit from the employment and training programs that are available. A listing of ANCET members along with their addresses and telephone numbers can be found in the Educational and Vocational Training Sites In Alaska section on page 38 of this booklet.

Education

To prepare school students for the reality
of today's world.
To relearn.
To tell about what remains of the past.
That it is their country from the ancient past
and that they are Dena'ina.
They should learn to focus their minds.
They should learn about various
kinds of work.
They should learn how to help us.
They must learn to be strong-minded
in order to be our leaders.
They should know all of the language and the
skills.
They should be aware of the old people
and retain all of their language work.
They should learn without writing.
Encourage parents,
fathers, mothers, and kids.
They should be aware that their land
is the Dena'ina land.
Study the words, the remaining words,
and all the different songs,
and the place names that they made long ago.
And they should compare all the living things,
how living things grow.

Peter Kalifornsky
One of the last speakers of the
Dena'ina language of Cook Inlet, Alaska

Marketable Skills

Marketable skills are selling points. They suggest ways you might present your qualifications to an employer.

For graduates with vocationally-oriented degrees such as business, legal assistant, and nursing science, the links between school and the work place are obvious. But every student, regardless of major, gains skills that can be marketed to an employer. Here are some examples from *College, Knowledge, & Jobs* published by the New York State Department of Labor. But remember, "Employers hire people, not majors."

Psychology Majors

- Using insight into behavior to deal effectively with people
- Promoting good relationships within a group and in the community
- Applying knowledge of human needs and problems to counseling, crisis intervention, or other social services
- Applying knowledge of childhood development to the care and education of children
- Utilizing educational methods in or out of the classroom
- Making use of interviewing techniques in investigative, reporting, social service, or marketing-research contexts
- Administering psychological tests and interpreting results
- Conducting surveys and interpreting results
- Analyzing statistical data
- Using computers and assisting in laboratory research
- Conducting library research and writing reports

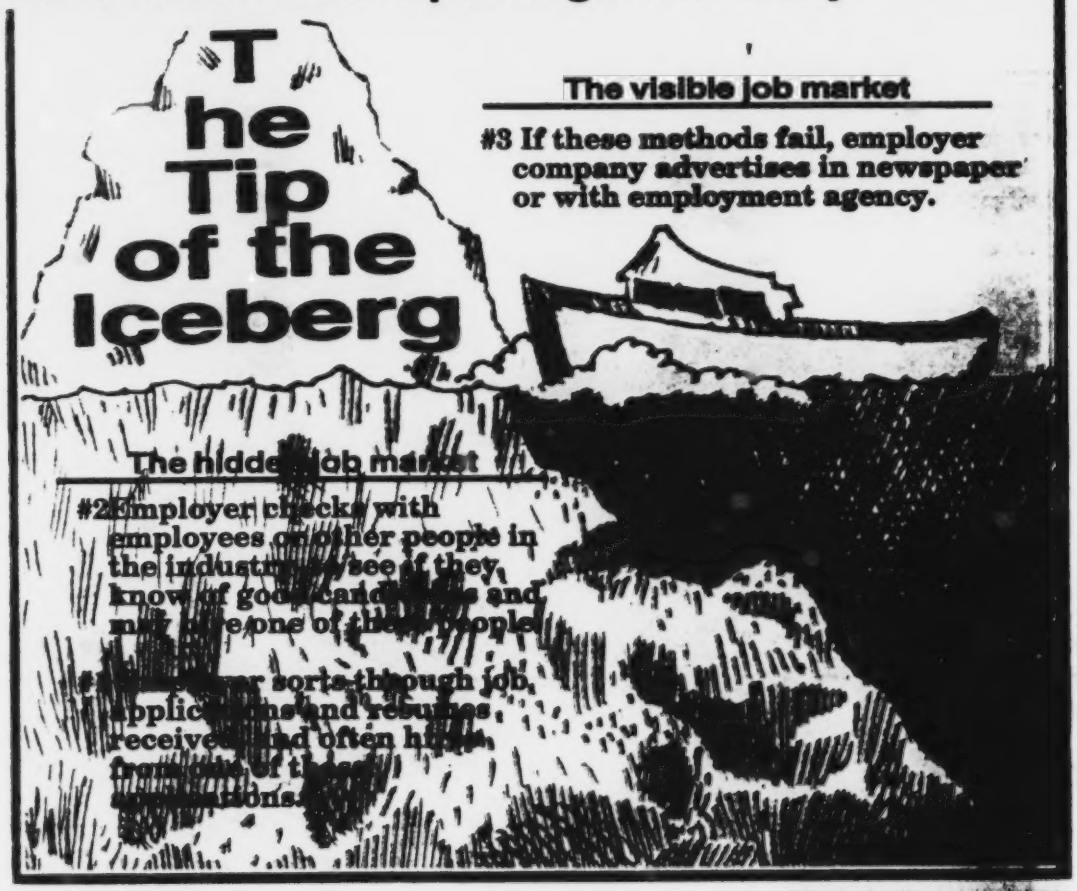
History Majors

- Making use of past experiences in reaching current decisions
- Bringing historical perspective to contemporary issues in education, labor, urban development, public finance, and health; providing insight into problems by supplying information as to how they developed and were dealt with in the past
- Following trends to predict shifts in political views or consumer tastes
- Monitoring profit cycles and changes in government policies to provide up-to-date business information
- Managing information; finding, collecting, and evaluating data; organizing voluminous collections of letters and papers, including business records
- Reading rapidly and extracting relevant data
- Using statistical methods and computers to analyze the results of research
- Interviewing; eliciting information from people outside an organization and supplying it to people on the inside
- Finding the key questions involved in an issue, weighing evidence and opinions, and reaching a conclusion
- Documenting a conclusion and presenting it clearly, either through speech or writing
- Selecting, preserving, and making available for use historically valuable artifacts, records, and buildings
- Keeping group memories alive through writing, film making, or the preparation of dioramas and photographic exhibits

English Majors

- Influencing others through words
- Conducting literature searches; summarizing and organizing complicated materials
- Presenting material in an original and interesting way, clearly and concisely, with attention to current usage
- Choosing words, idioms, and metaphors to express an idea with the desired nuances or connotations
- Writing in varied styles and forms (plays, film scripts, essays, technical reports, novels, articles, advertisements) as required
- Adapting language to different audiences, translating jargon into readable prose, rewriting material for different reading levels
- Presenting original views and interpretations on various topics
- Recognizing propaganda; identifying the devices used to sway an audience
- Holding the attention of an audience, prospect, or client
- Delivering prepared speeches or speaking extemporaneously before groups
- Proofreading and editing; correcting errors of grammar and content; suggesting improvements
- Interpreting or translating a foreign language
- Observing and reporting accurately
- Having something to say and saying it effectively; creatively interpreting and expressing human experience

Advertised Job Openings Are Only


The Tip of the Iceberg
The visible job market
#3 If these methods fail, employer company advertises in newspaper or with employment agency.
The hidden job market
#2 Employer checks with employees or other people in the industry to see if they know of good candidates and may approve one of these people.
#1 Employer sorts through job applications and resumes received and often hires from this group of applications.

Manitoba Prospects 1992

School Stress Never Lets Up

School-based stress hits students hard at all grade levels, indicates a new study.

Interviewers surveyed nearly 200 Northwest elementary and secondary students of both genders identified by teachers as at risk. Those surveyed indicated 334 stressors they felt at school, above all the strain of school-work. All felt equal academic pressure, most frequently from tests, but also from work-sheets, classwork and homework.

Many students--more girls than boys--cited social stresses about not knowing other students, and peer pressure about appearance. Several students--also more girls than boys--said teachers harassed them, commonly mentioning teachers "screaming" at loud students. More boys than girls said they felt anxious about disciplinary matters.

Jeanne Bauwens, et al., The School Counselor, Vol. 40, No. 2, November 1992.

MUSICIANS A HIGH-STRESS GROUP

Stage fright and lack of artistic control make musicians a high-stress group; nearly 30 percent of musicians in major symphony and opera orchestras use beta-blockers, perscription drugs to treat high blood pressure, when performing, says a study by David Sternback of the D.C. Institute for Mental Health.

The Wall Street Journal, December 1, 1992

If you're still unsure about hiring the disabled,

Like so many other disabled people, Stevie Wonder has proven that a challenge never slowed his ability to succeed.

Give someone with a disability a chance. Hire them.

We believe you'll be overjoyed at what you see.

...we Wonder why.

Governor's Committee on Employment of People with Disabilities

Poster Design: Clarence (CW) White, Jr.

The Americans with Disabilities Act (ADA)

The Americans with Disabilities Act of 1990 is a significant piece of federal legislation. It makes it unlawful to discriminate in employment against a qualified individual with a disability. The act has five sections, or "titles." The following information highlights important definitions and points regarding Title I - Employment.

What employers are covered?

Job discrimination against people with disabilities is illegal if practiced by an employer with 15 or more employees.

Who is protected?

If you experience a disability and are qualified to do a job, the ADA prohibits job discrimination on the basis of your disability. The ADA defines a disability as a physical or mental impairment that substantially limits a major life activity. The ADA also protects you if you have a history of a disability (such as cancer that is now cured); or if an employer believes or "perceives" that you have a disability, even if you don't (such as scars from a burn. The scars are visible, but do not limit a major life activity).

If you have such a disability, you must be qualified to perform the main job duties , with or without a reasonable accommodation, in order to be protected from job discrimination by the ADA. An employer cannot refuse to hire you if, because of your disability, you cannot perform duties that are not essential to the job or are considered "marginal functions."

What is "reasonable accommodation"?

Reasonable accommodation is any change or adjustment to a job or work environment that permits a qualified applicant or employee with a disability to work. Examples of reasonable accommodations may include:

- providing or modifying equipment or devices
- job restructuring
- part-time or modified work schedules
- reassignment to a vacant position
- adjusting or modifying examinations, training materials, or policies
- providing readers and interpreters
- making the workplace accessible to people with disabilities

An employer is required to provide a reasonable accommodation to a qualified applicant or employee with a disability unless the employer can show that the accommodation would be an undue hardship - meaning it would require significant difficulty or expense.

Are all employment practices covered?

The ADA makes it unlawful to discriminate in all employment practices including:

recruitment • firing • hiring
training • job • assignment
promotions • pay
benefits • lay off

It is also unlawful for an employer to retaliate against you for asserting your rights under the ADA.

What can employers inquire and require?

When applying for a job, the employer cannot ask you if you have a disability or the nature or severity of it. An employer can ask if you can perform the essential functions of the job with or without a reasonable accommodation and can ask you to describe or demonstrate how,

with or without a reasonable accommodation, you will perform the duties of the job.

An employer can only require you to take a medical exam after you are offered the job and only if every other person in that job class was required to take a medical exam. Once you have been hired and started work, your employer cannot require you to take a medical exam or ask questions about your disability unless they are related to the job.

What about drug tests?

Drug tests are not considered medical exams under the ADA and nothing in the ADA says you cannot be denied employment or fired because of illegal drug use. Former drug users who are currently enrolled in or who have successfully completed a drug rehabilitation program are protected.

Who enforces the ADA?

The Equal Employment Opportunity Commission (EEOC) enforces the ADA. The nearest office is:

EEOC-Seattle District Office
2815 Second Ave., Suite 500
Seattle, WA 98121
(206) 553-0968 (Voice) or (206) 399-1362 (TDD)

If you wish to contact someone locally with questions about the Americans with Disabilities Act or other information and referral, you may contact:

Governor's Committee on Employment of People with Disabilities (GCEPD)
3301 Eagle Street, Suite 203
P.O. Box 107018
Anchorage, AK 99503
(907) 269-4877/78 (Voice) or (907) 269-4879 (TDD)

Alaska laws that protect people with disabilities

Title 18, Chapter 80 of the Alaska State Statutes creates a Commission for Human Rights to enforce laws that prohibit discrimination. Under these statutes, employers with one or more employees are covered. For more information contact:

State Commission for Human Rights
800 A Street
Anchorage, AK 99501
(907) 276-3177(TDD) 1-800-478-4692 (Voice)

School Shopping Tips

Picking the School That's Right for You

by Diane Barrans

The first steps for choosing a school are [illegible] the toughest ones. To save yourself time [illegible] you should:

1) Think about the kind of career and [illegible] you want before you look for a school.
2) Set some basic guidelines:

- **What do you plan to study?**
- **What type of degree or certificate are you planning to pursue?**
- **Where would you like to study?**
- **In what size community do you want to go to school?**
- **How big do you want the school to be?**
- **What are the admission requirements?**
- **How much are the tuition and fees?**

There are also other factors to consider when making a school choice:

1) **What are you good at?**
2) **What jobs interest you?**
3) **Do you want to find employment in your hometown or somewhere else?**
4) **What have your high school studies prepared you for academically?**

Thinking about questions like these will help streamline your search for the right school.

continued on page 35

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School Shopping Tips *continued*

An excellent way to help answer these questions is by using the Alaska Career Information System (AKCIS). AKCIS is a comprehensive computerized career guidance system developed for Alaskans seeking occupational and educational information. AKCIS is available at most high schools and colleges, Alaska Employment Service offices, and at many private and public employment and training agencies.

A feature of AKCIS called SCHOOL SORT will provide you with a list of two- or four-year schools based on your responses to a short series of questions. If you are looking for $-DOLLARS-$ to help fund your education, AKCIS can also help. The feature is AIDSORT and it allows you to identify over 1,300 possible scholarships, grants, loans and work study programs suited to your personal educational plan, abilities, background, interest area and needs.

Libraries are another excellent place to look for answers. A comprehensive library source (found in the reference section) is *The College Blue Book* which is divided into several volumes: Degrees Offered by College and Subject, Narrative Descriptions, Tabular Data, Scholarships, Fellowships, Grants and Loans, and Occupational Education.

The amount of information contained in this publication can be overwhelming if you don't first narrow your search by focusing on your personal guidelines. However, if you have done that, *The College Blue Book* is extremely useful. You can find your preferred major field of study and then read a description of the listed schools, with information about their size, entrance requirements, costs, the college campuses, and community environments.

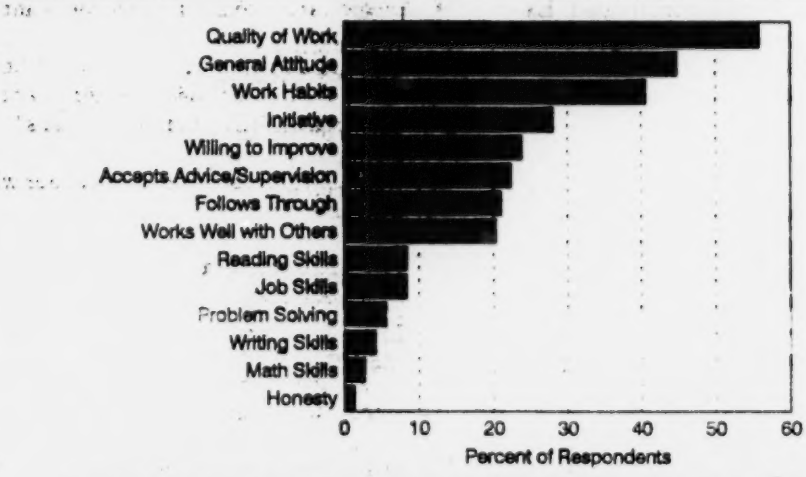
Peterson's Guide is another major source which include "Guides" to: Certificate Programs, Two-Year Colleges, and Four-Year Colleges. *The Technical, Trade, & Business School Data Handbook* gives you information on each school's job placement rates as well as describing what assistance staff provides during your job hunt following graduation.

Rather than have this list go on and on, I will simply end with this advice--Get to know your counselor and librarian! There are a number of school directories for almost any topic--guides for students with physical or learning disabilities, directories of foreign schools, financial aid for athletes, academics and others.

Once you have a greater awareness of your school possibilities, your decision will still not be easy--but at least you'll have the facts!

Why Are Alaskans Fired from Their Jobs?

Survey question: Please rank the three most important job preparation skills whose lack causes employees who are high school students or recent graduates to lose their job or to be unsuccessful in their employment.



The "Alaska Job Skills Survey" was mailed to 475 Alaska personnel managers. A total of 143 usable surveys were returned, for a 30% response rate. Respondents provided three responses for each category of employee. All three responses were tabulated and included above.

FINANCIAL AID

Financial aid is available to help pay for costs of education beyond high school. The money for financial aid comes from federal and state governments, banks, the schools themselves, and private donors. To receive financial aid, you must apply for it separately from applying for admission to the school. The amount and kind of aid you get are based on your financial need, your academic record, and the kinds of aid available at the school you attend.

Most students who receive aid get a combination of grants, loans, and work-study. These sources of financial aid are put together in a financial aid package by the financial aid office at the school or college you have chosen. Financial aid applications are available from most high school counseling offices and college financial aid offices.

Several types of financial aid are available:

Grants

Do not require repayment; most are federal and state grants based on financial need. Example: federal Pell Grants for undergraduate students, or Alaska State Educational Incentive Grants for in-state or out-of-state undergraduate students.

Loans

Typically repaid after you leave school at much lower interest rates than regular bank loans. Example: Alaska Student Loans for Alaska-resident undergraduate and graduate students are available through the Alaska Commission on Postsecondary Education.

Work-Study

Money you earn. Jobs are usually on campus and sometimes related to career goals or fields of study. Example: working in a computer lab.

Private Aid Programs

Aid offered by private organizations or individuals. Example: National Merit Scholarship Program, or aid from a local organization such as a labor union, fraternal order, or Parent-Teacher Association.

Special Aid Programs

Aid for special groups of students. Example: National Federation for the Blind scholarships; Bureau of Indian Affairs grants; or federal aid for students in fields specially targetted for financial aid, e.g., health or law enforcement.

Aid for Military Personnel

Financial aid opportunities that come with joining the military. Example: Veterans Educational Assistance Program.

Steps in Getting Financial Aid

The following steps for getting financial aid are for a student entering school fall term.

The fall before you will enter school:

1. Select schools that will fulfill your educational and occupational goals.
2. Write or call the Admissions Office at each school you are interested in. Ask about financial aid possibilities and application procedures.
3. Obtain the correct financial aid applications you will need. Forms are available from your high school counselor or from a college financial aid office.
4. Estimate the cost of attending each of the schools you have chosen.
5. Ask your high school counseling office if it will sponsor a financial aid information seminar. Students and parents can learn much about

financial aid sources and procedures at these events.

6. Begin compiling the family financial information needed to fill out your financial aid applications: last year's tax return, figures on non-taxable income, and information on assets.

Soon after January 1:

7. Send the financial aid need analysis form for processing. (Your application will not be accepted before January 1, so do not send it before this date.)

8. Some schools may request additional information from you such as copies of federal tax returns. Learn what each school requires and provide the information by the deadlines.

9. The schools you choose will notify you whether they will give you financial aid. They also will explain how much grant, loan, or work-study money they can offer you.

10. Tell each school your plans in writing--whether you accept their financial aid packages or not.

Those who choose to attend the summer term:

11. Aid awarded for the academic year must be used during that period. However, aid also may be available during the summer term. Ask your aid officer well in advance of summer enrollment if summer aid is available at your school. Some schools may have a separate summer application process, so be sure to check with your financial aid office.

Each January, if you are planning to be in school the next year:

12. Apply for financial aid again. You must reapply each year.

NOTE: Students entering school during other times also need to complete the need analysis form as soon as possible after January 1 of the year they are entering school.

An excellent tool for discovering sources of financial aid is the Alaska Career Information System (AKCIS). AKCIS provides information on more than 1,000 different sources of financial aid. These sources can be sorted for you according to your financial needs, interests, abilities, and characteristics. AKCIS financial aid information is available in both computer program and in printed book form.

Other sources of financial information can be found in your school or public library or at a career counseling office.

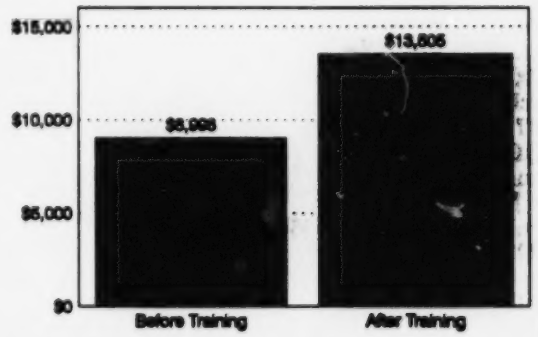
AKCIS is also an excellent tool for obtaining detailed information about schools and their training programs. The five-digit AKCIS code numbers accompanying most of the schools and training centers listed in the following section allow you to obtain more information using the AKCIS files. Schools contained in AKCIS are limited to those that are approved by the Alaska Commission on Postsecondary Education and have regular programs of study that will qualify you for careers you might be interested in.

AKCIS is available at many sites, including: Alaska Employment Service Offices, high schools, university offices, vocational rehabilitation agencies, and Native nonprofit agencies. For more information, or to locate the office near you, please write or call:

Alaska Career Information System
Department of Education
801 W. 10th Street, Suite 200
Juneau, Alaska 99801-1894
(907) 465-2980

TRAINING PAYS

Average Earnings Year Before & After Vocational Training



**Based on 129 AVTEC graduates in Fiscal Year 1991*
Source: Alaska Department of Labor, Research & Analysis

EDUCATION & VOCATIONAL TRAINING SITES IN ALASKA

Computer Training Institutes

Use these numbers to look up schools in the Alaska Career Information System (AKCIS)

43103
Alaska Computer Institute/ Anchorage
701 East Tudor Road, Suite 101
Anchorage, AK 99503
(907) 563-2244 or 1-800-478-2244

43132
Computer Skills Training/ Anchorage
8050 Old Seward Highway
Anchorage, AK 99518
(907) 344-5055 (collect)

43304
Alaska Computer Institute/ Fairbanks
520 Fifth Avenue, Suite 112
Fairbanks, AK 99701
(907) 452-7661 or 1-800-478-7660
Fax: (907) 452-6031

44334
Computer Skills Training/ Fairbanks
455 3rd Avenue, Suite 118
Fairbanks, AK 99701
(907) 452-6541

Flight Instruction Schools

49101
Aero Tech Flight Service, Inc.
1100 Merrill Field Drive
Anchorage, AK 99501
(907) 279-6558

49107
Elmendorf Aero Club
PO Box 292
Elmendorf AFB, AK 99506
(907) 753-8274

49108
Aero Alaska Corporation
2301 Merrill Field Drive
Anchorage, AK 99501
(907) 278-9752

49114
Vernair
1704 East 5th Avenue
Anchorage, AK 99507
(907) 258-7822

49121
Aviation North
PO Box 671528
Chugiak, AK 99567
(907) 688-3545

49123
Flight Safety Alaska, Inc.
1740 East 5th Avenue
Anchorage, AK 99501
(907) 277-0511

49313
Eielson Aero Club
PO Box 4611
Eielson AFB, AK 99702-0611
(907) 377-1223

49322
The Aviation Company
East Ramp-Fairbanks
International Airport
3788 South University Avenue
Fairbanks, AK 99709
(907) 474-0599

49724
AK Flying Network
403 North Willow, #1
Kenai, AK 99611
(907) 283-5700

Hairdressing & Cosmetology Schools

81123
Northern Lights Academy of Hair
117 West Northern Lights Blvd.
Anchorage, AK 99503
(907) 274-3663

81125
A Head of Time
3801 Old Seward Highway, #8
Anchorage, AK 99503
(907) 562-2372

81128
Trend Setters School of Beauty
407 East Northern Lights Blvd.
Anchorage, AK 99503
(907) 274-7150 or 1-800-478-7151

81132
Anchorage Alaska Barber College
3517 Mountainview Drive
Anchorage, AK 99508
(907) 274-0732

81134
Jon Anthony Training Salon
1601 East Dimond Blvd., Suite 202
Anchorage, AK 99507
(907) 276-6129

81324
New Concepts Beauty School
0959 College Road
Fairbanks, AK 99701
(907) 452-4684

81326
Fairbanks Beauty School
1255 Airport Road, #2-A
Fairbanks, AK 99701
(907) 452-2555

Military Base Programs

99195
Fort Richardson Army Education Center
Attn: AVRA-PA-AE
Fort Richardson, AK 99505
(907) 384-0970
Alaska Pacific University
Central Texas College
Chapman College
University of Alaska Anchorage
University of Laverne

99197
Elmendorf Air Force Base Education Services Center
3rd MSSQ/MSE
Elmendorf AFB, AK 99506-1400
(907) 522-2120
Embry-Riddle Aeronautical University
Chapman University
University of Alaska Anchorage
University of Laverne
Veterans Administration
Wayland Baptist University

99398
Fort Wainwright Army Education Center
Building 2110
Fort Wainwright, AK 99703
(907) 353-7486
Central Texas College
University of Alaska Anchorage
University of Alaska Southeast
University of Laverne
Wayland Baptist University

99399
Eielson Education Services
343 MSSQ/MSE
2258 Central Avenue, Suite 2
Eielson, AK 99702-5065
(907) 377-5106
University of Alaska Anchorage
University of Laverne
Wayland Baptist University

99796
Fort Greely Education Center
Building 661
Fort Greely, AK 99873
(907) 873-3268

Native Corporations
(*ANCET member)

*Aleutian/Pribilof Islands Association
401 East Fireweed Lane, Suite 201
Anchorage, AK 99503-2111
(907) 276-2700 or 1-800-478-APIA
Fax: 276-4894 (health)
Fax: 279-4351 (administration)

*Association of Village Council Presidents
PO Box 848
Bethel, AK 99559
(907) 543-3521 or 1-800-478-5257
Fax: 543-3596

*Bristol Bay Native Association
PO Box 310
Dillingham, AK 99576
(907) 842-5257 or 1-800-478-5257
Fax: 842-5932

*Central Council of Tlingit & Haida Indian Tribes
320 W Willoughby, Suite 300
Juneau, AK 99801
(907) 586-1432 or 1-800-478-1432
Fax: 586-8970
Central Council of Tlingit & Haida Indian Tribes
504 W 25th Street
Anchorage, AK 99503
(907) 276-1391

*Chugachmiut/Copper River Native Association JTPA Consortium
3300 C Street
Anchorage, AK 99503
(907) 562-4155 or 1-800-478-4155
Fax: 563-2891

*Cook Inlet Tribal Council
670 West Fireweed Lane, Suite 200
Anchorage, AK 99503
(907) 272-7529 or 1-800-478-2260
Fax: 277-9071

Copper River Native Association
Drawer H
Copper Center, AK 99573
(907) 822-5241
Fax: 822-5247

Inupiat Community of the Arctic Slope
PO Box 934
Barrow, AK 99723
(907) 852-4411
Fax: 852-8844

*Kawerak, Inc.
PO Box 948
Nome, AK 99762
(907) 443-5231
Fax: 443-3708

*Kenaitze Indian Tribe
PO Box 988
Kenai, AK 99611
(907) 283-3633
Fax: 283-3052

*Kodiak Area Native Association
402 Center Avenue
Kodiak, AK 99615
(907) 486-5725 or 1-800-478-5721
Fax: 486-2763

Maniilaq Association
PO Box 256
Kotzebue, AK 99752
(907) 442-3311
Fax: 442-2381
*Maniilaq Manpower
PO Box 725
Kotzebue, AK 99752
(907) 442-3860 or 1-800-478-3860
Fax: 442-2381

*Metlakatla Indian Community
PO Box 8
Metlakatla, AK 99926
(907) 886-5872
Fax: 886-7997

*Tanana Chiefs Conference
122 First Avenue, Suite 600
Fairbanks, AK 99701
(907) 452-8251 or 1-800-478-6822
Fax: 459-3850

Yukon-Kuskokwim Health Corporation
101 Main Street
PO Box 528
Bethel, AK 99559
(907) 543-3321
Fax: 543-5277

Other Professional Training Sites

44137
Alaska Bar Review/ B.A.R., Inc.
425 G Street, #760
Anchorage, AK 99501-2137
(907) 277-3333

Public Safety Education: Firefighting/ Law Enforcement/ Emergency Medical Services

49533
Department of Public Safety
Training Academy
877 Sawmill Creek Highway
Sitka, AK 99835
(907) 747-6611

Interior Region EMS Council, Inc.
1881 Marika Street
Fairbanks, AK 99709
(907) 456-3978

Maniilaq Association
PO Box 256
Kotzebue, AK 99752
(907) 442-3311

Norton Sound Health Corporation
PO Box 966
Nome, AK 99762
(907) 443-3311

49134
Regional Fire Training Center
1140 Airport Heights Road
Anchorage, AK 99508
(907) 278-2324
(also located in Juneau, Fairbanks, Bethel, Kotzebue)

Southeast Region EMS Council, Inc.
207 Moller Drive, Room 113
Sitka, AK 99835
(907) 747-8005

Southern Region EMS Council, Inc.
6130 Tuttle Place
Anchorage, AK 99507-2041
(907) 562-6449

Yukon Kuskokwim Health Corporation
EMS/Accident and Injury Control Dept.
PO Box 528
Bethel, AK 99559
(907) 543-3321

Seminaries and Bible Schools

21107
Alaska Baptist Native School of Theology
802 East 3rd Avenue
PO Box 140210
Anchorage, AK 99514
(907) 279-3631

21127
Far North Bible College
916 East 11th Avenue
Anchorage, AK 99501
(907) 276-7851

21511
Covenant Life College
PO Box 1329
Haines, AK 99827
(907) 766-2992

21709
Alaska Bible College
PO Box 289
Glennallen, AK 99588
(907) 822-3201

21729
Saint Herman's Theological Seminary
414 Mission Road, Pouch 1
Kodiak, AK 99615
(907) 486-3524

Travel/Tourism Schools

44148
The Travel Academy
1415 E Tudor Road
Anchorage, AK 99507-1033
(907) 563-7575 or 1-800-770-7575

44149
SST Travel Schools of Alaska
4609 Business Park Blvd.
Anchorage, AK 99503
(907) 563-8585 or 1-800-478-8585
Fax: (907) 561-4060

Colleges and Universities

21133
Alaska Pacific University
4101 University Drive
Anchorage, AK 99508
(907) 564-8248

21135
University of Alaska Anchorage
Office of Admissions and Student Relations
3211 Providence Drive
Anchorage, AK 99508
(907) 786-1587

21141
Wayland Baptist University-Alaska Center
360 Boniface Parkway, #18A
Anchorage, AK 99504
(907) 333-2277

21337
University of Alaska Fairbanks
Office of Admissions and Records
Suite 102, Signers' Hall
Fairbanks, AK 99775-0060
(907) 474-7822 or 1-800-478-1823

21506
Sheldon Jackson College
801 Lincoln Street
Sitka, AK 99835
(907) 747-5221

21539
University of Alaska Southeast
11120 Glacier Highway
Juneau, AK 99801
(907) 465-6239

22133
Alaska Junior College
800 East Dimond Blvd., Suite 3-350
Anchorage, AK 99515
(907) 349-1905

22155
Matanuska-Susitna College/UAA
PO Box 2889
Palmer, AK 99645
(907) 745-9774

22326
Nenana Center/UAF
Red Building, Room 145
Fairbanks, AK 99775
(907) 474-5825

22547
Ketchikan Campus/UAS
2600 7th Street
Ketchikan, AK 99901
(907) 225-6177

22561
Sitka Campus/UAS
1332 Seward Avenue
Sitka, AK 99835
(907) 747-6653

22716
Aleutians Center/UAF
PO Box 248
Unalaska, AK 99685
(907) 581-1656

22719
Arctic Sivunmun Ilisagvik College/UAF
Pouch 7337
Barrow, AK 99723-7337
(907) 852-0280

22721
Bristol Bay Campus/UAF
PO Box 1070
Dillingham, AK 99576
(907) 842-5483

22722
Yukon Flats Center/Interior UAF
PO Box 194
Fort Yukon, AK 99740
(907) 662-2521

22723
Delta Greely Learning Center/UAF
PO Box 412
Delta Junction, AK 99737
(907) 786-1379

22724
Yukon-Koyukuk Center/UAF
Red Building, Room 145
Fairbanks, AK 99755
(907) 474-5825

22725
McGrath Center/UAF
PO Box 269
McGrath, AK 99627
(907) 524-3074

22727
Tok Center/UAF
PO Box 464
Tok, AK 99780
(907) 883-5613

22745
Kenai Peninsula College/UAA
34820 College Drive
Soldotna, AK 99669
(907) 262-5801

22749
Kodiak College/UAA
117 Benny Benson Street
Kodiak, AK 99615
(907) 486-4161

22753
Kuskokwim Campus/UAF
PO Box 368
Bethel, AK 99559
(907) 543-4563

22757
Northwest Campus/UAF
Pouch 400
Nome, AK 99762
(907) 443-2201

22759
Prince William Sound Community College
PO Box 97
Valdez, AK 99686
(907) 835-2697

22759
Prince William Sound Community College/Cordova Extension
PO Box 1248
Cordova, AK 99574
(907) 424-7598

22759
Prince William Sound Community College/Copper Basin Extension
Drawer N
Copper Center, AK 99573
(907) 822-3673

22767
Chukchi Campus/UAF
PO Box 297
Kotzebue, AK 99752
(907) 442-3400

Vocational/Technical Institutions

43150
Alaska Institute of Business and Technology
4000 Old Seward Highway
Anchorage, AK 99503
(907) 272-1844

44138
H & R Block, Inc./Anchorage
3555 Arctic Blvd., C-1
Anchorage, AK 99503
(907) 561-5113

44152
Mila Administrative Services
3330 C Street, Suite 100
Anchorage, AK 99503
(907) 562-MILA

44746
New Frontier Vocational Technical Center
PO Box 1869
Soldotna, AK 99669
(907) 262-9055

49102
Charter College
2221 E Northern Lights Blvd., #120
Anchorage, AK 99508
(907) 277-1000

49103
Cimarron Technical Institute
5700 Old Seward Highway, Suite 101A
Anchorage, AK 99518-1473
(907) 561-8881

49158
Testing Institute of Alaska
2114 Railroad Avenue
Anchorage, AK 99501
(907) 276-3440

49361
Asbestos Removal Specialists of Alaska
1189 Van Horn Road
Fairbanks, AK 99701
(907) 451-8550

49701
People Count Vocational Training Center
PO Box 1310
Kenai, AK 99611
(907) 283-4504

49747
Alaska Vocational Technical Center
PO Box 889
Seward, AK 99664
(907) 224-3322

49754
Alaska Technical Center
PO Box 51
Kotzebue, AK 99752
(907) 442-3733

99131
John Robert Powers Finishing & Modeling School
300 East Dimond Blvd., Suite B-1
Anchorage, AK 99516
(907) 344-2525

99135
Gatekey School
700 W 41st Avenue, Suite 201
Anchorage, AK 99503
(907) 561-7327

99161
Alaska Professional Bartending School
4140 Old Seward Highway
Anchorage, AK 99503
(907) 563-5100 or 1-800-478-5101

99164
National Outdoor Leadership School
PO Box 981
Palmer, AK 99645
(907) 745-4047

99553
Southeast Regional Resource Center
210 Ferry Way, Suite 200
Juneau, AK 99801
(907) 586-5718

How to use the CAREER GUIDE 1993-1994 Table of Occupations

Occupational information contained in these tables presents a general, composite description of jobs and does not reflect work or earnings in specific establishments or localities.

Job Outlook designations are based on annual projected Alaska employment changes to 1995.

Excellent	Increase 2.6% or more
Very Good	Increase 1.7% to 2.5%
Good	Increase 0.9% to 1.6%
Fair	Increase 0.3% to 0.8%
Limited	Increase or decrease of .029%
Declining	Decrease of 0.3% or more
Varies	Considerable variations in different areas

Employment is the current estimated Alaska employment.

Pay indicates how much workers in an occupation generally earn. The first figure is typically what can be expected at the entry level; the second figure is typically what can be expected at the experienced level. Figures are expressed in monthly terms unless otherwise noted.

Suggested Training lists educational training which is normally recommended, or beneficial for entry into an occupation:

HS (high school diploma)
Graduation from high school or GED certificate

OJT (on-the-job training)
Training provided by the employer
Normally, less than 6 months

APPREN (apprenticeship)
Formal training
Normally, 2-5 years

VOC (vocational school)
Training for specific skills for a certain occupation
1-4 years

ASSOC (associate degree)
Specific educational program
2 years (beyond HS)

COL (college or university)
Formal education program from a college or university
4 years (beyond HS)

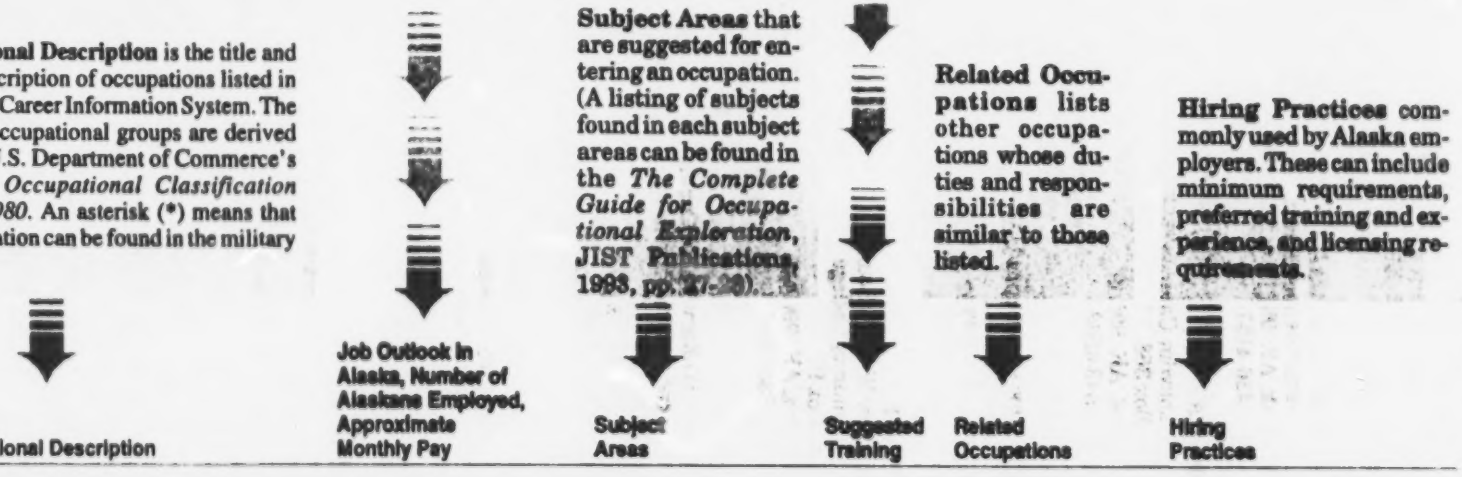
GRAD (graduate school)
Advanced university degree (including Masters, Doctorate or equivalent)
1-5 years (beyond COL)

Occupational Description is the title and a brief description of occupations listed in the Alaska Career Information System. The 19 listed occupational groups are derived from the U.S. Department of Commerce's *Standard Occupational Classification Manual 1980*. An asterisk (*) means that this occupation can be found in the military services.

Subject Areas that are suggested for entering an occupation. (A listing of subjects found in each subject areas can be found in the *The Complete Guide for Occupational Exploration*, JIST Publications, 1993, pp. 27-28).

Related Occupations lists other occupations whose duties and responsibilities are similar to those listed.

Hiring Practices commonly used by Alaska employers. These can include minimum requirements, preferred training and experience, and licensing requirements.



Executives, Administrators and Managers

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Accountants and Auditors* Compile and analyze business records and prepare financial reports which are used in making management decisions.	Opportunity fair 2,345 employed $2,400/$3,200	Business Administration and Finance Mathematics Office Procedures	COL GRAD	Bookkeepers Accounting and Statistical Clerks	A bachelor's degree is generally required. A higher degree and related work experience is often preferred. Some accountants are required to be certified. Good communication, public relation, and computer skills are important.
Business Executives and Managers Develop and administer plans and policies to achieve the goals and objectives of their organizations.	Opportunity limited (employment unavailable) $2,700/$3,600+	Business Administration and Finance Mathematics Social Studies Sales and Marketing Language Arts	COL GRAD	Financial Managers Small Business Operators	Experience in a supervisory or management capacity is usually required. A clearly defined area of expertise and a strong performance record are an applicant's most valuable assets.
Buyers and Purchasing Agents* Buyers purchase goods for their firms to resell. Purchasing agents buy the materials, supplies, and equipment needed for their organizations to function.	Opportunity good 1,000 employed $2,000/$2,700 (buyers) $2,000/$2,900 (purchasing agents)	Business Administration and Finance Mathematics Social Studies Sales and Marketing Language Arts	OJT COL	Shipping and Receiving Clerks Sales Representatives Stock Clerks	Most who work for large companies have a bachelor's degree in business administration or marketing. Small companies often promote capable sales, clerical, and production workers. Industry experience and technical knowledge are very helpful.
Construction Managers Plan and direct building projects such as buildings, bridges, pipelines, dams, airports, and utilities in order to satisfy contract specifications and construction schedules.	Opportunity very good 450 employed $2,750/$4,800	Business Administration and Finance Language Arts Social Studies Mathematics Technical Studies	COL	Architects Civil Engineers Cost Estimators Landscape Architects Production Superintendents	Most employers require several years of construction experience. A college degree may be required, often in engineering, architecture, or construction management. Many positions are filled through internal promotion.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Education Administrators Manage the business and academic operations of schools and colleges. Recruit and hire personnel. Prepare and present budgets and new programs. Develop policy guidelines for teaching and nonteaching staff.	Opportunity good 930 employed $3,500+/$5,830	Mathematics Business Administration and Finance Language Arts Social Studies	COL GRAD	University and College Teachers Elementary and Secondary Teachers Education Program Specialists	Elementary and secondary schools require a teaching certificate and three years experience. A master's degree is required for a state administrative certificate. University administrators normally are required to have a doctorate degree.
Employment Interviewers* Recruit, interview, and evaluate job applicants to determine the best possible match of employer and employee. May administer and analyze aptitude and proficiency tests.	Opportunity limited 275 employed $2,000/$2,700	Mathematics Language Arts Social Studies	COL	Personnel Officers Counselors Social Workers	Most employers prefer applicants who have a college degree, although individuals with considerable work experience in the areas of personnel or labor relations and who are skilled in interviewing may be hired.
Financial Managers Plan, develop, and administer the financial affairs of organizations. Oversee the production of budgets, investment of money, and cash flow. Suggest improvements in operations and use of company resources.	Opportunity good 1,520 employed $2,550/$4,100	Business Administration and Finance Mathematics Office Procedures	COL GRAD	Accountants and Auditors Business Executives and Managers Economists Loan Officers	Most employers require a college degree, plus experience in accounting, sales, or in a technical specialty such as marketing. Accounting and computer experience are very important.
Funeral Directors and Embalmers Prepare bodies for burial or cremation and assist the family in planning all aspects of a funeral or memorial service. Responsible for complete care of the deceased from initial notification until final interment.	Opportunity good 122 employed $2,000/$3,000+	Mathematics Science Language Arts Social Studies Business Administration and Finance	APPREN ASSOC COL		Funeral directors must have completed at least one year of study at an accredited college or university. Embalmers must have graduated from an accredited school of mortuary science. Both must be licensed by the state.
Health and Safety Inspectors* Enforce regulations and advise people about public health and safety in the work environment and in other public areas. They may also assist in efforts to eliminate violations.	Opportunity fair 520 employed $2,400/$3,300	Mathematics Business Administration and Finance Social Studies Language Arts	ASSOC COL GRAD	Quality Control Inspectors Sanitarians Science Technicians	A bachelor's degree in environmental health, biology, or other natural science is the minimum requirement for health inspectors. Safety inspectors must have knowledge and experience in a specific industry or a bachelor's degree in safety education or occupational health.

Health Services Administrators Manage the services and staffs of hospitals and other health care facilities to ensure satisfactory patient care and comfort.	Opportunity very good 340 employed $3,000/$5,700	Mathematics Business Administration and Finance Social Studies Language Arts Office Procedures	GRAD	Public Administrators	Most begin as assistant or associate administrators. A master's degree in public health, hospital administration, or public administration is preferred. Nursing home administrators are required to be licensed in Alaska.
Hotel and Motel Managers Plan, organize, and direct the business operations of hotels, motels, and lodging facilities in an efficient and profitable manner while serving their customers satisfactorily.	Opportunity good 390 employed $1,600/$2,600	Business Administration and Finance Language Arts Home Economics Sales and Marketing	OJT ASSOC COL	Restaurant Managers Hotel Desk Clerks	Although experience is of prime importance, employers at large motels and hotels increasingly emphasize at least two years of college education. Backgrounds that combine management training with public relations or community involvement are beneficial.
Loan Officers Evaluate applicants' financial background to determine whether or not they will receive loans.	Opportunity fair 250 employed $2,000/$3,000	Business Administration and Finance Mathematics Office Procedures	COL	Appraisers Bank Tellers Financial Managers Underwriters	A college degree in business or finance is preferred. In many institutions the position is filled by management trainees as one step of the management ladder. Some tellers work their way up to this position.
Management Analysts Examine procedures of organizations and problems related to work such as inventory, costs, resources, and distribution in order to develop methods to improve the operation.	Opportunity limited 240 employed $2,400/$3,500	Business Administration and Finance Language Arts Mathematics Social Studies	COL GRAD	Accountants and Auditors Educational Administrators Financial Managers Personnel Managers Public Administrators Sales and Service Managers	A bachelor's degree is the minimum educational requirement; a master's degree is usually preferred. The ability to analyze information accurately is important. Good writing, speaking, and computer skills are necessary.
Military Officers* Hold leadership and supervisory positions in the Army, Navy, Air Force, Marine Corps, and Coast Guard. Bear legal responsibility for preparing and carrying out effective military operations in defense of the United States and to support the government's foreign policy objectives.	Opportunity fair 3,390 Alaska based $2,000/$3,600 (inc. allowances)	Language Arts Mathematics Physical Education Social Studies	COL	Military Enlisted Personnel	A minimum of a bachelor's degree from a service academy, college, or university is needed. Good moral character is required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Office Managers Maintain an efficient flow of work by evaluating, organizing, and directing office production.	Opportunity fair 4,020 employed $1,800/$2,700	Business Administration and Finance Language Arts Mathematics Office Procedures	VOC ASSOC COL	General Office Clerks Secretaries Typists and Word Processors	Experience and familiarity with the organization's activities are often required. Promotion from within the company is common. Experience with word processors and other office machines is an asset.
Park Rangers Protect, maintain, and provide for the proper use of parks and historical sites.	Opportunity limited 210 employed Fed: $1,900/$2,800 + 25% COLA State: $2,650/$3,375	Mathematics Science Social Studies Shop and Crafts Physical Education	COL	Foresters Fish and Wildlife Technicians Natural Resource Managers	Entry jobs in state and federal government require a bachelor's degree in park and recreation management or a related field-oriented program such as botany, archeology, or the behavioral sciences. Many jobs in the state are seasonal.
Personnel Managers Plan and administer policies that govern all phases of personnel activity, including hiring, compensation, and labor relations.	Opportunity good 930 employed $3,000/$3,100	Mathematics Language Arts Social Studies Business Administration and Finance	COL	Office Managers Employment Interviewers	A college degree in business or public administration with experience in personnel work is preferred. Many organizations promote from within the organization.
Production Superintendents Plan and oversee ways for an organization to most effectively allocate labor, machines, and materials for the production of goods or services.	Opportunity excellent 185 employed $2,050/$3,500	Shop and Crafts Business Administration and Finance Language Arts Mathematics Technical Studies	HS ASSOC COL	Quality Control Inspectors	Promotion from within the firm is the usual method of entry. Normally, several years of technical experience and familiarity with the policies and operations of the organization are required.
Property and Real Estate Managers Manage commercial and residential properties such as office buildings, shopping centers, and apartments. Oversee the day-to-day operations, arrange for maintenance, collect rents and fees from tenants, keep financial records and show vacancies to prospective tenants.	Opportunity good 400 employed $1,600/$2,500	Business Administration and Finance Mathematics Language Arts Home Economics Sales and Marketing Shop and Crafts	HS ASSOC COL	Hotel and Motel Managers	Experience is important, though employers are increasingly hiring inexperienced college graduates with administration and communication skills who have a cheerful, outgoing attitude. State licensing is required.

Public Administrators Manage, coordinate, and direct the activities of city, state, or federal government agencies or bodies. Duties include gathering and analyzing data, discussing issues with interested parties, developing and incorporating policy changes, and administering programs.	Opportunity good 1,090 employed $3,500/$5,500	Business Administration and Finance Mathematics Language Arts Social Studies	COL GRAD	Health Service Administrators Education Administrators Social Program Developers Business Executives and Managers Economists	Minimum requirement is a bachelor's degree in the intended area of administration. Related experience is preferred with some positions filled by internal promotion. A background in finance or budgeting is very helpful. Some public administrators are appointed or elected to office.
Recreation Directors and Supervisors* Plan recreation programs and manage facilities and staff. They evaluate programs, prepare budgets, train and coordinate the activities of staff. Areas of recreation include athletics, cultural arts and crafts, camping, dance, and therapeutic recreation.	Opportunity limited 110 employed $2,150/$2,800	Mathematics Business Administration and Finance Social Studies Language Arts Physical Education	COL GRAD	Recreation Leaders Recreation Guides	Most government positions require a bachelor's degree in recreation, physical education, or public administration. Experience as a recreation leader is beneficial. Some positions are filled by promotion from within an organization.
Restaurant Managers* Are responsible for the overall operation of establishments that serve food and beverages. They assume responsibility for customer satisfaction, their employees, and the profit goals of the business.	Opportunity good 950 employed $1,500/$2,700	Business Administration and Finance Mathematics Language Arts Home Economics Sales and Marketing	HS ASSOC COL	Hotel and Motel Managers	Promotion from within the firm is common. Experience in all areas of restaurant operation is important. Employers in large restaurants may prefer those who have a college degree in business administration, food preparation, sales, management, marketing, or related fields.
Sales and Service Managers Direct the distribution of products and the delivery of services to customers. Sales managers analyze market data, recruit and train salespersons, and establish sales territories and quotas. Service managers supervise workers and direct customer services.	Opportunity very good 3,910 employed $1,600/$2,600	Mathematics Social Studies Language Arts Office Procedures Sales and Marketing	HS ASSOC COL	Production Superintendents Sales Representatives	Promotion of experienced sales and service employees is the primary method of filling these positions. Knowledge of products and servicing is essential. Sometimes a college degree is required.
Ship Officers and Engineers* Officers are responsible for and oversee the general welfare of the crew and vessel. Engineers supervise the operation and repair of engines and other mechanical equipment.	Opportunity very good 180 employed $150.00/$210.00/day	Mathematics Science Language Arts Social Studies Shop and Crafts	OJT VOC ASSOC COL	Deckhands Recreation Guides	Must possess technical skills and current Coast Guard license. Ship officers need a good math background, knowledge of navigation, meteorology, and cargo handling. Engineers need a good math background, knowledge of propulsion systems, electricity, plumbing, and the ship structure.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Small Business Operators Own and operate small firms that sell goods, provide services, or manufacture products. They maintain responsibility for the success of the business by investing time, energy, and money into the operation.	Opportunity varies 9,750 small businesses $1,500/wages vary	Mathematics Language Arts Social Studies Business Administration and Finance Sales and Marketing	HS VOC ASSOC COL	Financial Managers Business Executives and Managers Hotel and Motel Managers Jewelers Handcrafters	Demands effective planning and organizing skills. Knowledge of accounting, bookkeeping, purchasing, sales, and marketing are essential. Technical knowledge of products being sold is helpful. Businesses must have a state business license.
Underwriters Review insurance applications, determine the degree of risk involved, and accept or reject them following the company's underwriting policies.	Opportunity very good 90 employed $1,700/$2,600	Business Administration and Finance Mathematics Office Procedures	ASSOC COL	Appraisers Loan Officers Claims Adjusters and Examiners	Many employers require a college degree. Others promote clerical workers who have considerable knowledge of underwriting. Experience in the insurance field is important.

Engineers and Architects

Aerospace Engineers* Design, construct, and test aircraft and spacecraft, including missiles, space shuttles and space stations. An aerospace engineer may work in specialized areas such as propulsion, structural engineering, or guidance and control systems. They may also specialize in one type of aerospace product, such as passenger or cargo aircraft, helicopters, spacecraft or space stations.	Opportunity limited Few employed $3,200/$4,800	Science Mathematics Technical Studies Shop and Crafts	COL GRAD	Mathematicians and Statisticians Engineering Technicians Physical Scientists Engineers	Minimum qualifications include a bachelor's degree in engineering, although most positions require at least a master's degree. Research experience and skills in computer-aided design and computer programming are valuable. State licensing may be required.
Architects Design and develop drawings for proposed buildings, structures, and their surroundings in order to meet clients' requirements and specifications.	Opportunity good 205 employed $2,500/$4,070	Mathematics Science Language Arts Art Technical Studies Agriculture	COL GRAD	Civil Engineers Interior Designers and Decorators Drafters	Graduation from an accredited school of architecture and several years of experience is usually required. Most work several years in drafting and support positions before advancing to jobs with design responsibility. Knowledge of computer-aided design is important. State licensing is required.

Cartographers* Design and construct maps and charts to show the spatial properties of the earth's features. They use information from field surveys, satellites, aerial photographs, existing maps, and other sources.	Opportunity good 140 employed $1,900/$3,500	Mathematics Science Language Arts Technical Studies Art Social Studies	COL	Civil Engineers Surveyors Drafters	A bachelor's degree in cartography or related field is normally the minimum educational requirement, although some employers will hire experienced drafters or drafting technicians. Knowledge of computer-aided design and computer graphics are important.
Chemical Engineers Design and test production methods and supervise the manufacture of chemicals and chemical products. Research the effect on chemicals using such variables as temperature, pressure, and time in an effort to develop new products and production processes.	Opportunity good 50 employed $3,300/$4,500	Science Mathematics Language Arts	COL GRAD	Chemists Engineers	Entry positions require a bachelor's degree. Some employers prefer applicants with experience or a master's degree. Computer-aided design and computer programming skills are helpful. State licensing may be required.
Civil Engineers* Plan, design, and supervise construction of roads, railroads, airports, harbors, bridges, dams, pipelines, water and sewage systems. Duties include developing plans, making models, comparing costs of various methods, and ensuring the project complies with regulations.	Opportunity good 1,265 employed $2,700/$4,500	Mathematics Science Language Arts Technical Studies Shop and Crafts	COL	Construction Managers Mechanical Engineers Electrical Engineers Petroleum Engineers Mining Engineers	Minimum education of a bachelor's degree in engineering or a closely related field. Some employers require experience and a master's degree. Experience with computer-aided design is important. State licensing may be required.
Electrical Engineers* Design, develop, and test electrical and electronic equipment, machinery, and systems. Besides manufacturing, many electrical engineers work in applications, construction, administration, consulting, sales, and teaching.	Opportunity excellent 415 employed $3,500/$4,700	Mathematics Science Language Arts Shop and Crafts	COL	Civil Engineers Mechanical Engineers	Minimum education requirement is a bachelor's degree in electronics or electrical engineering. Some employers prefer applicants with experience and a master's degree. Computer-aided design and computer programming skills are important. State licensing may be required.
Engineers* Apply the principles of science and mathematics to solve technical problems in the design, production, or construction of structures, products, systems, and processes. May work in or supervise testing, production, operation, or maintenance operations.	Opportunity very good 4,210 employed $3,200/$4,800	Mathematics Science Language Arts Shop and Crafts Technical Studies	COL	Civil Engineers Electrical Engineers Mechanical Engineers Industrial Engineers Mining Engineers Petroleum Engineers	A bachelor's degree in engineering is required for entry positions. Some employers require a master's degree and/or experience. Computer-aided design and computer programming skills are valuable. State licensing may be required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Industrial Engineers* Evaluate the use of personnel, equipment, and materials in order to design efficient production methods.	Opportunity very good 45 employed $3,200/$4,700	Mathematics Business Administration and Finance Science	COL	Mathematicians and Scientists Systems Analysts Engineering Technicians Engineers	Entry jobs require a bachelor's degree in industrial engineering or closely related field. Some employers prefer experience and/or a master's degree. Knowledge of computer science is important. State licensing may be required.
Landscape Architects Combine art, science, and engineering to plan and design useful and decorative outdoor areas. Projects may include commercial, industrial, and residential developments. They may also include parks and other public projects.	Opportunity limited 35 employed $2,200/$3,500	Science Technical Studies Agriculture Mathematics	COL GRAD	Engineers Architects Urban and Regional Planners Drafters Horticultural Workers	Many employers now require a degree in landscape architecture and related experience. They prefer applicants with good technical and communication skills who can work as part of a team.
Mechanical Engineers* Design machines, products, and processes that produce, transmit, and use power. They prepare drawings and models, build machines, and test them before they are used. Some specialize in mechanical and steam power, hydraulics, air conditioning and refrigeration, bio-engineering, pollution control, and automotive engineering.	Opportunity very good 265 employed $2,600/$3,970	Mathematics Science Language Arts Shop and Crafts Technical Studies	COL	Mining Engineers Petroleum Engineers Civil Engineers Electrical Engineers	A bachelor's degree in mechanical engineering is required for entry positions. Some employers require a master's degree and/or experience. Drafting and design experience is very helpful. State licensing may be required.
Mining Engineers Locate potential mining sites using exploration and geological data. Plan and design the development phase. Responsible for the safe and efficient operation of mines. Plan and oversee the disposal of tailings and ensuring reclamation and environmental compliance.	Opportunity fair 30 employed $2,800/$4,080	Mathematics Science Language Arts Technical Studies	COL	Mechanical Engineers Petroleum Engineers Civil Engineers Geologists	A bachelor's degree in mine engineering or closely related field is required for most positions. Some employers require related work experience. State licensing may be required.

Petroleum Engineers Develop and implement methods to explore and drill for oil and gas. Gather geological data to develop maps of subsurface oil and gas reservoirs. Select drilling sites, extraction techniques, and equipment to be used. May work in refineries to help determine the best use of the product.	Opportunity fair 715 employed $3,700/$5,000	**Mathematics** **Science** **Language Arts** **Technical Studies**	COL GRAD	**Mining Engineers** **Mechanical Engineers** **Civil Engineers** **Geologists**	**Employers require at least a bachelor's degree, although a master's degree is becoming the norm. Field or technical experience is important, State licensing may be required.**
Surveyors* Measure the earth's surface to determine property boundaries and to provide data for map making, construction, and engineering purposes. Surveyors may specialize in two fields of land surface measurement; land surveying and construction surveying.	Opportunity good 420 employed $2,400/$3,910	Mathematics Science Language Arts Technical Studies	OJT APPREN ASSOC COL	Surveyor Helpers Engineering Technicians	Some employers require either a two- or four-year degree in surveying and mapping science. Some enter this occupation as an instrument assistant or surveyor helper. State licensing may be required.

Computer Scientists and Mathematicians

Mathematicians and Statisticians* Conduct research and analyze numerical data to provide information to help solve managerial, scientific, and engineering problems.	Opportunity limited 100 employed $2,500/$3,500	Mathematics Language Arts Business Administration and Finance	COL GRAD	Computer Programmers Systems Analysts Economists	A bachelor's degree in math or statistics is required for entry positions. An advanced degree is increasingly necessary. A Ph.D. usually is required for college level teaching positions.
Systems Analysts* Plan data processing systems to meet business, scientific, or engineering needs. Examine organizational needs, analyze different methods to meet the needs, and confer with managers or users to determine how to improve data input, output, or work flow.	Opportunity very good 750 employed $2,600/$4,560	Mathematics Science Language Arts Social Studies	ASSOC COL GRAD	Computer Programmers Computer Operators	Many are promoted from programmer or other technical positions within a company. A bachelor's or master's degree with experience or courses in computer languages and concepts is preferred by most organizations.

Natural Scientists

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Astronomers Study the sun, solar system, stars, and galaxies using principles of mathematics and physics to answer questions about the nature of the universe.	Opportunity limited Fewer than 10 Wages unavailable	Science Mathematics	COL GRAD	Mathematicians & Statisticians Physicists Life Scientists Earth Scientists University and College Teachers	A doctoral degree in astronomy or related field is the most common requirement. Some technician and other support positions are open to those who have bachelor's or master's degrees.
Biologists Study living organisms and their life processes. Can include the origin, identification, classification, structure, physiology, diseases, and behavior.	Opportunity fair 1,100 employed $2,550/$3,100	Agriculture Mathematics Science	COL GRAD	University and College Teachers Plant Scientists Life Scientists	An advanced degree such as a master's or Ph.D is required for professional research, teaching, and most administrative positions. A minimum of a bachelor's degree is required by the federal government for entry-level positions.
Chemists* Research the composition and structure of chemical substances. Perform experiments to learn how matter is composed. Study chemical problems and analyze data. Conduct research to add to existing knowledge. Analyze materials for their content, and attempt to formulate new products such as drugs, paints, and foods.	Opportunity good 75 employed $2,600/$4,100	Science Mathematics	COL GRAD	Chemical Engineers Life Scientists Science Technicians	A bachelor's degree in chemistry is normally the minimum educational requirement. A master's or Ph.D is needed for most research jobs and for college level teaching. Experience in lab work is beneficial.
Earth Scientists Research the history, composition, and characteristics of the earth, including the atmosphere and oceans.	Opportunity very good 760 employed $2,200/$4,200	Science Mathematics Social Studies	COL GRAD	Life Scientists Geologists Meteorologists Oceanographers Physical Scientists	A bachelor's degree is the minimum requirement for field exploration positions and laboratory research assistants. An increasing number of employers are requiring a master's degree or Ph.D. Some employers require two to three years of experience in addition to a degree.

Foresters Plan and supervise the growing, protection, and harvesting of trees. Evaluate forest resources and direct timber sales, reforestation projects, recreational use, flood and soil erosion control projects, and fishery enhancement programs. Research ways to protect forests from fire, insects, and disease.	Opportunity limited 280 employed Fed: $2,300/$3,000 +25% COLA State: $2,650/$3,350	Mathematics Science Language Arts Agriculture Business Administration and Finance	COL GRAD	Park Rangers Fish and Wildlife Technicians Forestry Technicians	Must be in good physical condition. A bachelor's degree in forestry or related field is the minimum educational requirement for most entry jobs. Some employers require an advanced degree. Experience as a forestry aide or technician is helpful.
Geologists Study the materials, processes, and history of the earth for scientific knowledge and for purposes such as locating oil and minerals.	Opportunity stable 670 employed $2,200/$4,200	Mathematics Science Language Arts Physical Education	COL GRAD	Mining Engineers Petroleum Engineers Physical Scientists	A bachelor's degree is the minimum requirement for field exploration positions and laboratory research assistants. Advanced degrees are required by an increasing number of employers, especially for applicants with little work experience. Employers are emphasizing certification and the use of computers.
Life Scientists Study living organisms and their relationship to the environment in order to increase knowledge and to solve problems. Some specialize in areas such as microbiology, ecology, physiology, or zoology. Most work as researchers, consultants, or teachers.	Opportunity fair 1,160 employed $2,600/$3,300+	Science Mathematics	COL GRAD	Physical Scientists Earth Scientists Science Technicians University and College Teachers	An advanced degree is necessary for professional research, teaching, and administrative jobs. A bachelor's degree is the minimum requirement for positions as research assistants and laboratory technicians. Employers prefer those who can work well with others either as a leader or as a team member.
Meteorologists* Gather and analyze information on atmospheric conditions. They attempt to identify and interpret past weather trends and predict future weather conditions. Some may teach or conduct research.	Opportunity limited 85 employed $1,900/$4,000	Science Mathematics Language Arts Social Studies	COL GRAD	Physical Scientists Geologists Oceanographers University and College Teachers	A bachelor's degree with a major in meteorology or atmospheric science is the minimum requirement for most beginning jobs. Jobs with the National Weather Service require a bachelor's degree in meteorology, atmospheric science, or other natural science with at least twenty semester hours in meteorology.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Oceanographers* Utilize principles and techniques of natural science, mathematics, and engineering to study the oceans, including their movements, physical properties, and plant and animal life.	Opportunity limited 16 employed $2,500/$4,000	Mathematics Science Language Arts Physical Education	COL GRAD	Biologists Physical Scientists Earth Scientists Geologists Meteorologists Plant Scientists Commercial Divers University and College Teachers	Minimum requirement for entry positions is a bachelor's degree in oceanography or related field, although many employers now require a master's or Ph.D. Some employers require specific training and field experience in addition to academic training.
Physical Scientists Investigate the structure and composition of matter in the universe. Many conduct research designed to increase basic scientific knowledge. Others use research results to solve problems while working to develop products. Some specialty areas include chemistry, physics, and astronomy.	Opportunity good 310 employed $2,550/$3,600	Mathematics Science Language Arts	COL GRAD	Life Scientists Biologists Chemists Physicists Astronomers Geologists Meteorologists Oceanographers University and College Teachers	A bachelor's degree is usually the minimum educational requirement. An advanced degree is important for more responsible research positions and for college teaching positions. Some employers require lab experience, training in instrumental analysis, and computer usage or programming.
Physicists* Conduct research on the characteristics of matter and energy in the universe. They attempt to discover basic principles governing the structure and behavior of matter, the generation and transfer of energy, and the interaction of matter and energy.	Opportunity limited 10 employed $4,100/$5,400	Mathematics Science Language Arts	COL GRAD	Life Scientists Earth Scientists Astronomers Chemists Mathematicians & Statisticians University and College Teachers	A master's degree in physics or closely related field is almost essential for entry level jobs and for advancement. A Ph.D. is usually required for teaching positions at most colleges and universities and for directing private industry and government research and development programs.
Plant Scientists Study and research plants in order to develop and enhance their usefulness. Agronomists develop methods to improve the characteristics, hardiness, and yield of field crops. Plant pathologists study causes and ways to prevent and control plant diseases. Horticulturists develop new varieties and methods of growing flowers, fruits, vegetables, and shrubs.	Opportunity limited 40 employed $2,300/$4,100	Mathematics Science Language Arts Agriculture	COL GRAD	Biologists Foresters	A Ph.D. is required to direct teaching and research programs. An advanced degree is necessary for botanists, university extension agents, and administrative positions.

Social Scientists/Workers, Religious Workers, Lawyers

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Anthropologists Trace the origin and evolution of the human race through the study of changing physical characteristics, and cultural and social institutions. Most specialize in one of four areas: cultural anthropology, archaeology, linguistics, or physical anthropology.	Opportunity fair not available $2,500/$4,600	Science Language Arts Mathematics Social Studies	GRAD	Social Scientists Writers and Editors Urban and Regional Planners Psychologists University and College Teachers	A master's degree and field experience are sufficient for many jobs, but promotion to top jobs may require a doctoral degree. Anthropology students and those with field experience may be employed in short-term jobs as field workers on archaeology projects. Alaska experience is highly desired.
Clergy* Provide spiritual leadership through worship services, personal counseling, and other activities. Prepare and deliver sermons, conduct religious rites such as weddings and funerals, provide religious instruction, and counsel individuals or groups.	Opportunity limited 280 employed $2,000/$3,000 (national)	Language Arts Social Studies	COL GRAD	Counselors Psychologists	Some religious groups have no formal educational requirements, but most require at least a bachelor's degree, plus graduate work in theology. Some require specialized training in counseling in addition to religious training.
Economists Study how resources such as land, labor, and capital are used to produce goods and deliver services that are needed. May conduct research to determine costs and benefits of a proposed project. Information collected and presented is often used as a basis in making policy decisions.	Opportunity limited 130 employed $2,900/$3,300	Mathematics Language Arts Social Studies Business Administration and Finance	COL GRAD	Public Administrators Financial Managers Accountants Social Scientists Mathematicians & Statisticians Urban and Regional Planners University and College Teachers	A bachelor's degree with a major in economics is usually the minimum requirement for employment. Positions that require managerial responsibility and/or independent research usually require a master or doctorate degree.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Lawyers* Interpret the law and its application to specific cases. May advise clients of their legal rights and obligations in such matters as land sales, taxes, and labor relations. May represent clients in cases involving civil or criminal matters or negotiate out-of-court settlements.	Opportunity good 2,000 employed $3,500/$5,600	Social Studies Language Arts Business Administration and Finance	GRAD	Legal Assistants	Lawyers must be licensed to practice in Alaska. This requires passing the state bar exam. Many law firms hire associates after completing an internship with the firm rather than recruiting directly out of law schools. A high score on the admission test, excellent grades, and good recommendations are important.
Market Research Analysts Compile information that organizations use to make decisions about their products and services. They design surveys, select samples of people, analyze and interpret information received, and present findings in concise, clearly written reports.	Opportunity limited 130 employed $2,000/$3,500	Sales and Marketing Mathematics Language Arts Social Studies	COL GRAD	Economists Sociologists Urban and Regional Planners Social Scientists	A bachelor's degree, preferably in marketing with a concentration in research, usually is required for entry positions. Graduate study is required for advancement. An master's degree is almost essential for jobs with large firms.
Parole and Probation Officers Help previous law offenders adjust to life in an open community and to prevent future criminal acts. May investigate social history and home conditions, counsel offenders, suggest plans for treatment, evaluate progress, write reports, and provide court testimony. Officers have arrest powers.	Opportunity limited 180 employed $2,100/$3,800	Language Arts Social Studies	COL	Social Workers Counselors	A college degree in behavioral sciences usually is preferred, although counseling and correctional experience may be subetituted for education.
Psychologists Work with individuals, couples, families, and groups who have personal, social, emotional, and behavioral problems. Can conduct tests, observe behavior, and provide psychotherapy to help people correct their problems.	Opportunity very good 300 employed $2,900/$4,100+	Language Arts Social Studies Science	GRAD	Counselors Social Workers Clergy	Most positions require a master's degree or doctorate in psychology. State licensing is required for those in private practice.

Recreation Leaders Guide or help in leisure activities. May demonstrate equipment and techniques, explain rules and regulations, and observe and supervise participants to ensure their safety and enhance their enjoyment and skill in arts and crafts activities, sports, music, dance, dramatics, and camping.	Opportunity good 1,040 employed $1,200/$1,400	Language Arts Social Studies Health Physical Education	ASSOC COL	Recreation Directors and Supervisors Recreation Guides	Employers prefer a two- or four-year degree in physical education, recreation, or related field, plus experience. Some employers only require experience in the field that the leader will be responsible for. First aid and CPR training may be required.
Social Scientists Study human behavior and environments to increase knowledge and to help solve society's problems. Try to understand and explain aspects of society such as market conditions, economics, human and social behavior, governments, history, and cultures.	Opportunity limited 310 employed $3,000/$3,850	Language Arts Social Studies Mathematics	COL GRAD	Elementary and Secondary Teachers University and College Teachers Public Administrators Economists Sociologists Anthropologists Market Research Analysts	A minimum of a bachelor's degree is normally required. Graduate degrees are increasingly necessary. Employers also look strongly at experience and competent research work that has been conducted.
Social Service Aides Assist clients in applying for social service programs. Explain available services, assist in filling out forms, and determine eligibility. May help them deal with government agencies, landlords, creditors, and employers.	Opportunity good 700 employed $1,600/$2,500	Language Arts Mathematics Social Studies Office Procedures	HS OJT	Social Workers Child Care Workers Teacher Assistants	High school graduation or equivalent is usually required. Most employers also require one or two years of experience working with the public, especially in a helping field.
Social Workers Help individuals and groups solve personal and social problems. May interview clients to identify problems and provide counseling. May help to determine eligibility for assistance, help clients get services, and record case progress.	Opportunity good 1,700 employed $2,200/$2,450	Science Language Arts Social Studies	COL GRAD	Counselors Parole and Probation Officers Social Service Aides	A bachelor's degree in social work is usually the minimum educational requirement, although most employers require a master's degree. Most positions are with federal and state agencies. State licensing may be required.
Sociologists Study the behavior and relationship of groups formed by people such as families, tribes, and communities. Direct research, prepare technical publications, teach, or act as consultants to lawmakers, administrators, or other officials dealing with problems of social policy.	Opportunity limited Few employed $2,200/$2,900	Social Studies Business Administration and Finance Mathematics Language Arts	GRAD COL COT	University and College Teachers Elementary and Secondary Teachers Public Administrators Social Workers Social Scientists	A master's degree in sociology is usually the minimum requirement for employment in a professional position or for teaching at a community college. A doctoral degree is essential for teaching and research positions at most colleges and universities.

Occupational Description	Job Outlook in Alaska. Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Urban and Regional Planners Conduct studies and develop proposals for the overall growth and improvement of urban, suburban, and rural areas. Much of a planner's time is spent meeting with public agencies and citizen advisory groups when researching their needs.	Opportunity good 170 employed $2,500/$3,600	Business Administration and Finance Language Arts Social Studies	COL GRAD	Civil Engineers Architects	Employers prefer applicants with undergraduate or graduate degrees in planning, public administration, or business. Some employers require one to two years of experience in such areas as land management, outdoor recreation planning, hazardous waste or environmental work.

Teachers, Librarians and Counselors

Coaches Instruct athletes on fundamentals, conditioning, training, and performance in sports. Observe players and recommend individual or team improvement. Demonstrate techniques, oversee practice, and determine strategy during competition.	Opportunity very good 700 employed Wages vary	Mathematics Language Arts Physical Education Social Studies Health	HS COL GRAD	Professional Athletes Recreation Leaders Elementary and Secondary Teachers	Knowledge of the sport beyond the basics is necessary to coach at the secondary school level and above. A coaching certificate, teaching certificate, first aid certificate, and successful completion of a rules examination may be required depending on the position and the employer.
Counselors* Help people make decisions about their education, careers, and personal lives. They collect and analyze information about their clients through interviews, aptitude and personality tests, and school records.	Opportunity very good 335 employed $2,000/$2,750	Mathematics Language Arts Social Studies History	COL GRAD	School Counselors Social Workers Parole and Probation Officers Psychologists	Most employers require a degree in counseling and additional expertise and experience in the area of specialization. Those who desire to work in public schools must meet state requirements for a teaching certificate with an emphasis in counseling.
Education Program Specialists Provide up-to-date technical information and professional assistance in specialized areas of education. Areas may include testing, curriculum planning, and advice to such groups as teachers, homemakers, and farmers.	Opportunity very good 260 employed $2,400/not available	Mathematics Social Studies Language Arts	COL GRAD	Education Administrators Elementary and Secondary Teachers Special Education Teachers	Some positions as education program specialists require a teaching certificate plus three to five years of experience in a specialty area. Some employers may substitute educational requirements for related experience.

Elementary and Secondary Teachers Provide classroom instruction to students in kindergarten through twelfth grade. Teach students concepts in various subjects such as mathematics, English, arts, science, and social studies. Additional duties include attending staff meetings, supervising extracurricular activities, and meeting with parents.	Opportunity varies 7,170 employed $3,450/$5,200 (9-month contract)	Mathematics Science Language Arts Social Studies	COL	Education Program Specialists Vocational Education Teachers Special Education Teachers University and College Teachers	A college degree in education and an Alaska teaching certificate are required for the majority of positions. Employers prefer applicants who are trained in multiple areas and who have previous teaching experience.
Librarians Select, order, and organize library materials such as books, magazines, recordings, and films, and make them available to library users.	Opportunity fair 460 employed $2,100/$3,700	Mathematics Language Arts Social Studies	GRAD	Library Assistants Museum Curators	A master's degree in library science is required for work in most libraries. Elementary and high school librarians are required to be certified both as teachers and as school librarians. Positions in rural communities are often filled by people with less professional training.
Museum Curators Preserve, research, interpret and exhibit objects of historical, artistic, and scientific importance. May work in museums, art galleries, zoos, and historic parks and houses.	Opportunity good 100 employed $1,700/$3,680	Mathematics Social Studies Business Administration and Finance Language Arts Art	COL GRAD	Public Administrators Social Scientists Biologists Librarians Graphic Artists and Designers	A bachelor's degree is usually the minimum requirement for employment, but many positions require or prefer a master's or Ph.D. degree. Museum related experience is desirable.
School Counselors Advise and assist in the educational, vocational, emotional, and social development of students. Work with students individually and in small groups. May give tests and interpret results. May confer with teachers, school nurses, psychologists, and parents.	Opportunity very good 225 employed $2,700/$3,650 (9-month contract)	Mathematics Social Studies Language Arts	GRAD	Social Workers Elementary and Secondary Teachers Psychologists Parole and Probation Officers	A master's degree and a teaching certificate are usually required. Those who work in public schools must meet state requirements for a teaching certificate with an emphasis in counseling.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Special Education Teachers Teach academic and living skills to individuals who have physical, mental, emotional or other types of learning disabilities.	Opportunity very good 1,025 employed $3,230/$4,280 (9-month contract)	Mathematics Health Social Studies Language Arts Home Economics Physical Education	COL	Occupational Therapists Physical Therapists Speech Pathologists and Audiologists Child Care Workers Vocational Education Teachers Elementary and Secondary Teachers Education Program Specialists	A college degree in education and an Alaska teaching certificate with a special education endorsement are required. Previous teaching experience is helpful.
University and College Teachers Provide advanced instruction to students in specific subject areas. Methods can include lectures, discussions, reading and research assignments, and laboratory sessions. May also conduct research and publish findings.	Opportunity good 2,200 employed $3,330/$5,430 (9-month contract)	Mathematics Language Arts Social Studies Science	GRAD	Educational Administrators Vocational Education Teachers Elementary and Secondary Teachers Education Program Specialists	Most positions at universities require a doctorate and a research background. Teaching experience often is required. In community colleges, a minimum of a master's degree usually is required.
Vocational Education Teachers Teach the practical and technical aspects of specific trades to students in public or private schools, community colleges, or to workers in industrial plants.	Opportunity limited 400 employed $2,000/$3,000 $3,450/$5,200 (public school) (9-month contract)	Mathematics Language Arts Social Studies Office Procedures Shop and Crafts Technical Studies	VOC COL	University and College Teachers Elementary and Secondary Teachers Special Education Teachers	Most employers require extensive academic and practical experience in the vocational area taught. A teaching certificate is required at elementary and secondary schools. No teaching certificate is required for those who teach at community colleges or within an industry setting, although being certified may enhance employment prospects.

Medical Diagnostic and Treating Occupations

Activity Therapists Use recreational, social, and cultural activities to help people regain their physical and emotional health. They lead, instruct, and encourage patients in group and individual activities such as games, sports, crafts, and dancing.	Opportunity very good 160 employed $2,100/$2,500	Mathematics Physical Education Social Studies Theater Arts Health Music Science		Occupational Therapists Physical Therapists Speech Pathologists and Audiologists	A college degree in the specific field (e.g. recreation, music, or art) with emphasis on therapy is usually required. &Some assisting jobs which involve less responsibility do not require a college degree.
Chiropractors Treat patients whose health problems are associated with the body's muscular, nervous, and skeletal systems, especially the spine.	Opportunity fair 130 employed $2,400/$6,000	Mathematics Science Language Arts Social Studies Health	GRAD	Physicians Physical Therapists	Most are self-employed. State licensing is required. Licensing requires completing at least three years of preprofessional college work and an additional four years of study at an accredited college of chiropractic studies.
Dentists* Examine and treat patients' teeth and oral tissues to prevent and correct dental problems.	Opportunity very good 390 employed $4,200/$7,000	Mathematics Science Health Social Studies Language Arts	GRAD	Dental Laboratory Technicians Physicians Dental Hygienists Dental Assistants	Most are self-employed in private practice. A pleasant personality and a relaxing manner is important when dealing with patients. State licensing is required.
Dietitians* Plan nutrition programs and supervise the preparation and serving of meals. They apply their knowledge of nutrition to help prevent and treat illnesses by promoting healthy eating habits.	Opportunity very good 110 employed $2,200/$2,750	Mathematics Science Language Arts Home Economics Health Social Studies	COL GRAD	University and College Teachers	Most employers require a bachelor's degree with a major related to nutrition. A graduate degree generally is required for public health or university teaching. Related experience is helpful.
Nurse Practitioners Are registered nurses with additional knowledge and skills that enable them to work independently in evaluating patients' needs and providing health care.	Opportunity varies 160 employed $3,400/$4,600	Mathematics Science Language Arts Social Studies Health	GRAD	Physician Assistants Registered Nurses Licensed Practical Nurses	Requires one to two years of specialized education beyond a bachelor's degree. National certification in a specialty area, such as pediatrics, midwifery, or adult medicine is required. A master's degree in an area such as public health is valuable.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Occupational Therapists* Help people who have physical, emotional, or mental disabilities learn to perform the tasks of daily living. They evaluate abilities and skills, set goals, and plan restorative programs.	Opportunity excellent 70 employed $2,000/$3,100	Mathematics Science Language Arts Social Studies Health	COL	Physical Therapists Special Education Teachers	A bachelor's degree in occupational therapy or related field is required. Some employers require an advanced degree, work experience, and national certification. State licensing is required.
Optometrists Examine eyes and prescribe corrective lenses or treatment to rotect and improve vision. Determine the presence of vision impairments, eye diseases, vision malfunctions, or other abnormalities. Licensed to prescribe and adapt lenses, contact lenses, or other optical aids.	Opportunity limited 50 employed $4,000/$6,500	Mathematics Science Health Language Arts Social Studies	GRAD	Opticians	Employers prefer applicants who have good technical skills and who can get along with patients and staff. Licensing requires graduation from an approved school of optometry.
Pharmacists* Dispense drugs and medicines prescribed by medical and dental practitioners.	Opportunity excellent 225 employed $3,600/$4,800	Mathematics Science Language Arts Health	COL	Physical Scientists Physicians	A five-year bachelor's degree in pharmacy is the minimum requirement for most jobs. An advanced degree usually is needed for research work, administrative positions, and college teaching. State licensing is required.
Physical Therapists* Help people overcome or adjust to physical disabilities caused by injury, illness, or birth defects. Work to improve the mobility, relieve the pain, and prevent or limit permanent physical disability.	Opportunity very good 120 employed $2,800/$3,700	Mathematics Health Science Physical Education Language Arts	COL GRAD	Occupational Therapists Special Education Teachers	Employers require at least a bachelor's degree and graduation from an accredited physical therapy program. Many training programs are now structured at the master's level. State licensing is required.
Physician Assistants* Provide routine and emergency medical care under general supervision of physicians. Most specialize in one of the following specialties: family practice, internal medicine, general surgery, emergency medicine, pediatrics, or orthopedic surgery.	Opportunity excellent 125 employed $3,500/$4,300	Science Language Arts Health Mathematics	VOC COL	Physicians Registered Nurses Nurse Practitioners Licensed Practical Nurses Community Health Aides	Graduation from a nationally accredited program and a collaborative relationship with a physician are required to practice in Alaska. Experience in emergency room procedures and work in remote settings are often desired. State licensing is required.

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Physicians* Diagnose medical problems and prescribe treatments to improve their patients' health. Advise people on good health practices. May be a general practitioner or a specialist such as a surgeon, internist, pediatrician, gynecologist, psychiatrist, or anesthesiologist.	Opportunity good 940 employed $5,000/$12,500	Science Language Arts Health Social Studies Mathematics	GRAD	Veterinarians Dentists Nurse Practitioners Registered Nurses Physician Assistants	Must be licensed to practice which requires passing a national certification exam. Educational requirements include completing at least three years of undergraduate education, four years of medical school, and one to six years of internship or residency at a hospital.
Psychiatrists Are licensed physicians who can diagnose, study, and prescribe medication to treat mental and emotional illness. Some specialize in areas such as general psychiatry, child and adolescent psychiatry, psychoanalysis, and treatment of alcohol and drug abuse.	Opportunity limited Few employed $8,500/$9,700	Social Studies Science Health Mathematics Language Arts	GRAD	Psychologists Counselors	State licensing is required. Psychiatrists must have graduated from an approved medical school and passed a medical board exam. An additional three- or four-year residency is required.
Registered Nurses* Provide health care to injured, sick, and healthy people. Determine patients' needs and develop care plans. Observe and record patient symptoms, give medicines and shots, write reports, analyze lab reports, observe patients, and chart findings.	Opportunity excellent 3,915 employed $2,500/$3,700	Science Language Arts Social Studies Health	VOC ASSOC COL	Physician Assistants Nurse Practitioners Licensed Practical Nurses Emergency Medical Technicians and Paramedics Nursing Assistants	Must be licensed in Alaska. Licensing requires completing a two- or four-year accredited nursing program and passing a national board exam. Many employers require at least one year of experience.
Respiratory Therapists* Under a doctor's order operates equipment such as respirators and breathing machines to help patients with breathing problems. Administer medicinal gases, instruct patients in performing breathing exercises, and monitor their progress.	Opportunity excellent 110 employed $2,200/$2,800	Science Language Arts Health Social Studies	VOC ASSOC COL	Physician Assistants Physical Therapists Registered Nurses Licensed Practical Nurses Emergency Medical Technicians and Paramedics	Formal training is necessary. Most employers require hospital work experience. National certification is available and sometimes required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Speech Pathologists and Audiologists* Speech pathologists provide treatment for speech, language, and voice disorders. Audiologists assess and treat hearing problems by testing and measuring hearing ability.	Opportunity very good 170 employed $2,400/$3,500	Science Mathematics Language Arts Social Studies Health	GRAD	Counselors Psychologists Special Education Teachers	A master's degree is generally required in speech pathology or audiology. Licensing and certification are required.
Veterinarians* Provide medical care for pets, livestock, sporting, and laboratory animals. Diagnose problems, dress wounds, set broken bones, perform surgery, prescribe and administer medicines, and vaccinate animals against diseases. Advise owners on pet care and breeding.	Opportunity limited 130 employed $2,000/$4,500	Mathematics Science Language Arts Agriculture	GRAD	Biologists Animal Caretakers	State licensing is required. Requirements include graduating from an approved school of veterinary medicine. Some employers require experience working with a specific kind of animal, such as horses, or a group of animals, such as small animals.

Writers, Artists, Entertainers and Athletes

Athletic Trainers Help athletes become and stay fit so they can compete in sports. Evaluate the physical condition of athletes, confer with coaches and team physicians, and develop and prescribe exercise programs and diets.	Opportunity limited Employment not available Earnings vary	Mathematics Health Physical Education Science Language Arts	COL GRAD	Physical Therapists Emergency Medical Technicians and Paramedics Elementary and Secondary Teachers Coaches Professional Athletes	Most employers prefer applicants who are certified by the National Athletic Trainers' Association. High schools may hire trainers who are not certified, but have related experience. In some sports, such as boxing, reputation is the most important qualification.
Clothes Designers and Patternmakers Create new apparel designs or construct full-size paper or fiberboard clothing patterns from sample garments or sketches.	Opportunity limited Employment not available $1,650/$2,600	Business Administration and Finance Home Economics Shop and Crafts Art	OJT VOC	Tailors and Garment Fitters Graphic Artists and Designers	Some employers prefer applicants with experience. Those who hire inexperienced workers usually look for graduates from schools of design.

Film and Video Makers Produce and direct productions that transform ideas and concepts into films and videotapes.	Opportunity limited 50 employed $1,400/$2,350	Language Arts Technical Studies Music	APPREN ASSOC COL	Public Relations Workers Writers and Editors Broadcast Technicians Performing Artists	Employers prefer a combination of formal training and experience. Small production studios look for applicants who can perform several tasks such as operating a camera and editing film.
Fine Artists Create paintings, sculptures, and other works of art for public and private display.	Opportunity varies Employment not available Earnings vary	Art Shop and Crafts Mathematics	HS VOC COL	Graphic Artists and Designers Handcrafters Performing Artists	Proven talent and competence in a specialty area. A portfolio containing slides or pictures of successful studio projects is essential for selling work, acceptance into galleries, and grant applications. Most are self-employed.
Floral Designers Create and prepare floral arrangements using fresh, dried, or artificial flowers and greenery.	Opportunity very good 40+ employed $1,200/$1,500	Art Shop and Crafts Home Economics Sales and Marketing Agriculture Business Administration and Finance	HS OJT VOC ASSOC	Horticultural Workers Groundskeepers and Gardeners	Most employers prefer applicants who have formal training in floral design, but some floral designers are trained on the job.
Free-lance Writers Produce a wide variety of written material on a self-employed basis. May write for newspapers, magazines, advertising and public relations firms, private corporations, and government agencies.	Opportunity fair Small occupation Earnings vary	Language Arts Social Studies Office Procedures	COL	Writers and Editors Technical Writers	Proven background in writing demonstrated by samples of previous work. A college degree in journalism, literature, or liberal arts may be helpful.
Graphic Artists and Designers* Create art work for newspapers, magazines, books, business signs, and package designs calling attention to products, services, or opinions. May paint or draw and may have a specialty such as lettering, cartoons, or illustrations.	Opportunity very good 600 employed $1,600/$2,100	Technical Studies Language Arts Art Social Studies Shop and Crafts Sales and Marketing	VOC ASSOC COL	Interior Designers and Decorators Floral Designers Clothes Designers & Patternmakers Photographers Printing Production Workers	Most employers prefer applicants who have training in art or design, plus proven skill. Talent and originality are important.
Handcrafters Create and make by hand a wide range of artistic and practical items for sale. In Alaska, this may include traditional crafts made from such items as wood, ivory, stone, grasses, and furs.	Opportunity good Approximately 2,500 Earnings vary	Basic Math Art Basketweaving Ivory Carving Wood Carving General Business		Small Business Operators Jewelers Fine Artists	Most are self-employed. Requires a combination of small business management skills and artistic ability.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Interior Designers and Decorators Plan interior space to improve the appearance and usefulness of commercial and residential buildings. May select colors, fabrics, floor and wall coverings, light fixtures, cabinets, and various other details.	Opportunity good 175 employed $1,500/$3,300	Shop and Crafts Art Technical Studies Mathematics Sales and Marketing Home Economics	VOC ASSOC COL	Graphic Artists and Designers	Most designers need a bachelor's degree in interior design and some practical experience. Decorators may be hired with an associate degree. Employers look for applicants with solid technical skills such as drafting, drawing, and design skills.
Interpreters and Translators* Express in one language what has been spoken or written in another.	Opportunity varies Employment not available $12.00/$45.00/hr.	Language Arts Social Studies Theater Arts	COL GRAD	Technical Writers Writers and Editors	Foreign language interpreters need proven fluency in at least two languages. Most are college graduates. Proven ability to sign is required for interpreters for the deaf.
Models Convey a feeling or an idea by their appearance, often persuading people to buy a product or service. Fashion models display clothing, make-up, and accessories. Photographers' models pose for magazines, catalogs, and commercials. Artists' models pose for artists and sculptors.	Opportunity limited Employment not available $10.00/$25.00/hr.	Theater Arts Language Arts	VOC	Performing Artists	Employers prefer to hire trained models and often only hire through modeling agencies. Most work is free-lance and part-time. Building and maintaining a reputation as a model takes determination and a lot of time and attention to one's personal appearance.
Performing Artists* Entertain audiences by singing, dancing, acting, or playing musical instruments.	Opportunity varies 230 employed Earnings vary	Language Arts Music Art Theater Arts Social Studies	VOC ASSOC COL	Models	Proven proficiency as an actor, dancer, musician, or singer is required. They often must demonstrate their talent before prospective employers during auditions.
Photographers* Use cameras to record visual images of people, events, and products on film. Use lights, filters, various lenses, and other accessories to create desired effects. Some develop and print their own photos.	Opportunity very good 180 employed $1,500/$2,130	Shop and Crafts Mathematics Science Art Technical Studies	OJT APPREN ASSOC COL	Graphic Artists and Designers Printing Production Workers Photofinishers	Experience is the most important asset. Many employers prefer some college or vocational school background. Some studios stress that applicants need a wide range of knowledge, including lab and retouching skills.

Professional Athletes Earn money by participating in competitive athletic events such as football, baseball, basketball, soccer, golf, and tennis.	Opportunity limited Few employed Earnings vary	Mathematics Science Health Physical Education		Elementary and Secondary, Teachers Coaches Recreation Leaders	Usually are selected from a college draft, picked as a free agent, or gradually advance from amateur or part-time status.
Public Relations Workers* Help organizations build and maintain favorable public understanding and support. Gather and analyze supportive data and carry out programs to communicate findings to the public through press releases and public appearances.	Opportunity good 155 employed $2,100/$3,300	Mathematics Language Arts Social Studies Selling and Marketing	COL	Association and Union Executives Writers and Editors	A bachelor's degree in public relations, journalism, marketing, or communications is necessary for most entry positions. A background in sales or experience in a field related to the employer's interest often is required.
Radio and Television Broadcasters* Broadcast news, weather, commercials, sports, and live events. Play music, host programs, and run switching and transmitting equipment.	Opportunity fair 220 employed $1,400/$1,700	Language Arts Social Studies Music Shop and Crafts Technical Studies	OJT VOC COL	Writers and Editors Broadcast Technicians	Employers require voice skills, plus training or experience in the control room. Taped auditions that contain samples of the applicant's style and work are important. Training in broadcasting technology is desirable.
Technical Writers Present scientific and technical information to various audiences from consumers to specialists in clear, easily understood terms through writing skills and knowledge of the subject.	Opportunity good Employment not available $2,800/$3,500	Language Arts Social Studies Mathematics Technical Studies	COL	Public Relations Workers Free-Lance Writers Writers and Editors	A bachelor's degree in a technical field, journalism, or English is usually considered the minimum requirement for entry into this field. A combination of writing skills and technical experience is helpful.
Writers and Editors* Writers seek information to write stories for publication and broadcast. Editors are responsible for the overall quality of writing and reporting.	Opportunity very good 630 employed $1,900/$2,770	Language Arts Art Office Procedures Social Studies	COL	Free-Lance Writers Technical Writers Radio and Television Broadcasters	A college degree in journalism or related field is the primary education requirement. Experience is a very important factor.

Health Technologists and Technicians

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Community Health Aides Provide primary health care in remote Alaska villages while working under the indirect supervision of a physician via radio or telephone. Provide preventive care such as applying fluoride to children's teeth, conducting prenatal and well-child exams, and teaching good health practices.	Opportunity limited 414 trained aides $1,800/$2,200	Science First Aid Home Economics Language Arts	VOC	Physician Assistants Registered Nurses Nurse Practitioners Licensed Practical Nurses Emergency Medical Technicians and Paramedics	Applicant is usually recommended by the village council or other local health governing body. Most are local residents who intend to remain in the village. Emergency Trauma Training may be required prior to hiring. Ability to speak the local Native language may be required.
Dental Hygienists While working under the general supervision of a dentist, they clean and polish teeth, take and develop X-rays, and note conditions of decay and disease. They also teach patients proper dental care.	Opportunity very good 275 employed $3,300/$4,900	Mathematics Science Social Studies Language Arts Health	ASSOC COL	Dental Assistants Dentists	Graduation from a two- or four-year course in dental hygiene. Experience as a dental assistant is helpful. State licensing is required.
Emergency Medical Technicians and Paramedics* Provide immediate care to critically ill or injured people while transporting them to a hospital or emergency care facility. They are normally in contact with hospital-based medical personnel.	Opportunity good 130 employed $2,000/$2,230	Mathematics Science Language Arts Social Studies Health	OJT VOC	Physician Assistants Registered Nurses Licensed Practical Nurses Community Health Aides Firefighters	Applicants must be at least 18 years old to be an EMT and at least 19 years old to be a paramedic. Hiring preference usually is given to those who are certified and have experience in emergency medical care.
Health Technicians Operate medical equipment to help diagnose and treat various health problems. Perform the appropriate tests, observe and record the behavior and activities of patients, and prepare reports.	Opportunity very good 130 employed $2,000/$2,500	Mathematics Science Language Arts Health	HS OJT	Medical Laboratory Workers Radiologic Technologists	Most employers prefer applicants who have at least a high school diploma. Some employers require previous health care experience, although skills for most specialties are learned on the job.

Licensed Practical Nurses* Help care for injured, sick, or disabled persons under the supervision of a registered nurse, dentist, or physician. May administer medications, monitor equipment, change dressings, prepare food trays, maintain patients' charts, take temperatures and pulse rates, and feed, bathe, massage and dress patients.	Opportunity very good 710 employed $1,700/$2,450	Mathematics Science Language Arts Social Studies Health	VOC	Registered Nurses Emergency Medical Technicians and Paramedics Nursing Assistants	Many employers require at least one year of experience in addition to the training that is required. Current CPR certification and office skills are a plus. State licensing is required.
Medical Laboratory Workers* Perform biological, chemical, bacteriological, and other related laboratory tests to obtain data used by physicians and other medical staff in the prevention, diagnosis, and treatment of illnesses.	Opportunity good 475 employed $2,200/$3,100	Mathematics Science Language Arts Health	OJT VOC COL	Biologists Health Technicians Science Technicians	Employers prefer technicians who have graduated from an approved two-year program. Medical technologists are required to have a four-year degree. Health related experience is highly valued.
Medical Records Technicians* Compile and maintain medical and statistical information about patients for hospitals and other health care facilities.	Opportunity excellent 180 employed $2,000/$2,200	Mathematics Language Arts Office Procedures Health	VOC ASSOC	Medical Secretaries Library Assistants Medical Assistants	Most employers prefer graduates of two-year associate degree programs and those who are accredited record technicians. Experience is helpful but not always required.
Radiologic Technologists* Operate X-ray equipment to help diagnose and treat various health problems. They prepare patients for the radiology examination, determine the duration and source of radiation, position and shield the patient, complete the exposure, and develop the film.	Opportunity excellent 250 employed $2,100/$2,970	Science Language Arts Health Social Studies	ASSOC COL	Medical Laboratory Workers Health Technicians Respiratory Therapists	Most employers hire experienced applicants that have completed a formal training program and who are nationally certified or registered. Many smaller clinics require applicants who can also draw blood and do laboratory work.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Sanitarians Work to protect society from public health hazards by enforcing regulations and through education. Inspect and regulate the handling, processing, and serving of food in public places. Work to ensure proper disposal of sewage, garbage, and industrial waste. Monitor air, noise, and other types of pollution.	Opportunity limited 70 employed $2,600/$3,100	Language Arts Science Health Social Studies	COL GRAD	Medical Laboratory Workers Quality Control Inspectors Pest Control Workers Health and Safety Inspectors	A bachelor's degree in environmental health or a related science is necessary for most positions. A master's degree in public or environmental health will help in competing for higher-level jobs.
Surgical Technologists Help in preparing for surgery, assist during surgery, and clean and stock operating rooms after surgery.	Opportunity excellent 50 employed $1,800/$2,400	Mathematics Science Health Social Studies	VOC ASSOC	Registered Nurses Nurse Practitioners Licensed Practical Nurses Nursing Assistants Medical Assistants	Most employers prefer graduates of a nine- to twelve-month surgical technologist training program. Many employers require national certification.

Technologists and Technicians (except Health)

Air Traffic Controllers* Separate aircraft using radar, non-radar, and visual procedures. Controllers issue clearances, provide traffic advisories, weather information, and emergency assistance. They monitor landing and navigational aids.	Opportunity fair 685 employed $1,900/$3,450 + 25% COLA	Mathematics Science Language Arts Social Studies Technical Studies	OJT COL	Dispatchers	Applicants must meet age requirements, have three years of general experience or four years of college, pass a written test, a personal interview, physical exam, and a thorough background check.
Broadcast Technicians* Install, operate, and maintain electronic equipment used to record or transmit radio and TV programs. Work with microphones, sound recorders, light and sound effects, TV cameras, and videotape recorders.	Opportunity limited 185 employed $9.00/$9.70/hr.	Technical Studies Shop and Crafts Mathematics Science Language Arts	HS OJT VOC ASSOC	Electronics Technicians Radio and TV Service Technicians Radio and TV Broadcasters	Experienced applicants with an electronics background are preferred. Some employers will hire vocational or technical training graduates for entry positions. Applicants who have multiple skills have an advantage in finding employment.

Computer Maintenance Technicians* **Install new computers and peripheral equipment. Perform preventive maintenance on computers that are being used. Answer customer calls for service and make changes to update units.**	**Opportunity very good 170 employed $2,000/$2,600**	**Mathematics Language Arts Technical Studies Shop and Crafts**	**VOC ASSOC**	**Electronics Technicians Office Machine Repairers Radio and TV Service Technicians**	**Most employers require completion of a training program which lasts normally two years. On-the-job training is also provided once employment begins.**
Computer Programmers* Write, update, and maintain detailed instructions or software that list in a logical order the steps that computers must execute. May code instructions in programming language such as COBOL or FORTRAN.	Opportunity very good 550 employed $2,500/$3,480	Mathematics Science Language Arts	ASSOC COL GRAD	Systems Analysts Computer Operators	At least 1 year of formal training is required for business programmers. Most jobs require either a two- or four-year degree in computer science. Training in a field related to the application is helpful.
Drafters* Prepare technical drawings that are used by production workers to build such things as industrial machinery, office buildings, and bridges. Drawings are based on rough sketches or diagrams from engineers, surveyors, architects, or scientists.	Opportunity very good 510 employed $2,000/$3,070	Mathematics Science Language Arts Technical Studies Art Shop and Crafts	HS VOC	Engineering Technicians Architects	Many entry positions require applicants to have at least an associate degree in drafting, including training in computer-aided drafting and design. Strong drawing and artistic skills is a plus.
Electronics Technicians* Trouble-shoot, calibrate, test, and repair electronic components and circuit boards used in products such as computers, scientific instruments, and calculators.	Opportunity very good 1,375 employed $11.30/$18.40/hr.	Mathematics Science Language Arts Technical Studies Shop and Crafts	OJT ASSOC VOC	Engineering Technicians Computer Maintenance Technicians Broadcast Technicians Electricians	Most employers require technical training in electronics or previous related work experience. FCC licensing may be required.
Engineering Technicians **Assist engineers in the planning, research, and development of engineering projects or products.**	**Opportunity good 850 employed $2,050/$2,800**	**Mathematics Science Language Arts Technical Studies Business Administration and Finance**	**OJT ASSOC COL**	**Engineers Drafters Construction Managers Surveyor Helpers**	**Most employers require at least a two-year degree in engineering technology or related work experience. A bachelor's degree will enhance employment chances.**
Fish and Wildlife Technicians Perform technical tasks in the study and protection of fish and wildlife. May work in a laboratory or at a remote field site.	Opportunity fair 200 employed $1,680/$2,300	Mathematics Science Language Arts Agriculture	ASSOC	Forestry Technicians Biologists Aquaculture Workers	Most applicants are required to have at least a two-year degree in fisheries or wildlife technology, or have experience which provides similar knowledge, skills, and abilities.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Legal Assistants* Assist lawyers. Research public records. Prepare summaries of legal documents. Interview clients and witnesses for information. Prepare legal documents such as wills, contracts, and deeds.	Opportunity very good 350 employed $2,000/$2,800	Mathematics Language Arts Social Studies Office Procedures Business Administration and Finance	OJT VOC ASSOC COL	Lawyers Legal Secretaries	Most employers prefer applicants who have at least a related associate degree, although applicants with experience such as legal secretary or who have received a paralegal certificate may be hired.
Microcomputer Support Specialists Install and maintain microcomputer systems. Provide technical assistance and training to system users.	Opportunity good Employment not available $1,800/$2,200	Mathematics Language Arts Technical Studies	VOC ASSOC COL	Computer Programmers Computer Maintenance Technicians Precision Instrument Repairers Electronics Technicians	At least two years of computer training beyond high school is preferred by most employers. Good communication skills and patience are necessary when working with customers.
Science Technicians Examine products and materials through testing in order to provide data that will be used to develop or manufacture products or raw materials. Their jobs are more practically oriented than those of scientists.	Opportunity good 760 employed $1,900/$2,300	Mathematics Science Language Arts	HS COL	Medical Laboratory Technicians Health and Safety Inspectors Quality Control Inspectors Sanitarians	Minimum education qualifications for a lab tester in most industries is a high school diploma with a background in math and science. A lab tester with research duties usually requires at least a four-year college degree in a scientific area.
Survey Helpers* Help surveyors determine the locations and boundaries of land areas for construction, mining, and other land uses. May calculate and analyze field data, create maps, and draft legal documents explaining locations and boundaries.	Opportunity good 300 employed $1,900/$3,100	Mathematics Science Language Arts Physical Education Technical Studies	HS ASSOC	Surveyors Engineering Technicians	Employers prefer applicants who have good math, computer, and drafting skills. Minimum educational requirement is a high school diploma, although some employers require applicants to have a two-year surveying degree.

Marketing and Sales Occupations

Appraisers Estimate the value of real estate and other forms of property when it is being bought, sold, insured, taxed, or mortgaged.	Opportunity good 180 employed $2,100/$4,000	Mathematics Language Arts Business Administration and Finance	OJT ASSOC COL	Claims Adjusters and Examiners Underwriters Loan Officers	A two-year degree in appraising or real estate, or a four-year degree in business may be required. Specific knowledge or experience with items being appraised is helpful. Bonding (for insurance purposes) and a good driving record may be required.
Automobile Salespeople Sell new or used cars and trucks. Explain features of the vehicle and demonstrate its operation. Compute and quote sales price and trade-in allowance. May assist customer in matters involving financing the purchase.	Opportunity very good 620 employed $1,850/$3,100	Mathematics Sales and Marketing Language Arts Social Studies Shop and Crafts Business Administration and Finance	HS OJT	Sales Representatives	A minimum of a high school diploma is usually required. Employers look for applicants who are well groomed, tactful, confident, and self-motivated. Experience in previous sales or public contact work is helpful.
Business Services Salespeople Sell various types of business services such as security, building maintenance, bookkeeping, and media advertising. Explain the benefits and cost to prospective customers. Close agreements, collect payment, assist in delivery and implementation, and provide ongoing consultation.	Opportunity very good 850 employed $1,660/$2,000	Mathematics Social Studies Language Arts Business Administration and Finance Sales and Marketing	HS COL	Sales Representatives	A high school diploma is usually the minimum educational requirement. Sales experience or college training is helpful. Beginners are typically given six months to a year to demonstrate their sales ability.
Cashiers and Grocery Checkers Calculate the cost of consumer purchases and accept payment. May assist customers in locating or choosing particular goods or services, answer inquiries, stock shelves, and help to take inventory.	Opportunity good 5,740 employed $1,100/$1,360	Mathematics Business Administration and Finance Office Procedures	HS OJT	Bank Tellers Stock Clerks	Employers look for neat, clean appearing, and friendly applicants who can be trustworthy. Experience working with the public is helpful. A high school diploma is usually required.
Insurance Agents Sell life, health, homeowner, automobile, and other types of insurance policies to the public. Analyze a client's needs and resources, then recommends a specific amount and type of insurance.	Opportunity good 500 employed $1,400/$2,300	Mathematics Sales and Marketing Language Arts Social Studies Business Administration and Finance	HS OJT COL	Securities Salespeople Underwriters Claims Adjusters and Examiners	Employers prefer applicants who have experience or some college training. A presentable appearance, personable manner, good verbal ability, and high level of personal motivation are important. State licensing is required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Real Estate Agents Help people buy, sell, or rent property. Agents locate and show property, perform market analysis, and help negotiate terms of a contract between parties.	Opportunity good 2,712 licensed $1,500/$2,750+	Mathematics Language Arts Social Studies Business Administration and Finance Sales and Marketing	HS OJT COL	Securities Salespeople Insurance Salespeople	Employers prefer applicants with at least a high school education. Experience in business and/or sales work is helpful. State licensing is required for agents and brokers.
Route Salespeople Use vehicles to sell and deliver products or services to wholesale and retail customers. Take orders, deliver merchandise, set up product displays, and keep sales records. Also make repairs to vending and other coin operated machines.	Opportunity good 475 employed $1,500/$2,150	Mathematics Driver Education Language Arts Sales and Marketing Business Administration and Finance Social Studies	HS OJT	Local Truck Drivers Store Salespeople	Most employers prefer applicants who have sales ability. A good driving record is important. Good health, neat appearance, and initiative is required. Previous sales experience is helpful.
Sales Representatives Sell equipment and supplies to businesses and organizations. Most travel to a customer's business where they display and demonstrate merchandise, quote prices, take orders, and prepare sales contracts.	Opportunity good 2,260 employed $1,700/$2,260	Mathematics Business Administration and Finance Office Procedures Sales and Marketing Social Studies	HS OJT COL	Business Services Salespeople Store Salespeople Automobile Salespeople	Some positions are filled through promotion from within the company. Other employers require previous sales experience. College graduates are preferred for some positions. A related technical background is often helpful.
Securities Salespeople Buy and sell stocks, bonds, securities, and mutual funds based on customer orders. Analyze investments and marketing conditions and apply this knowledge in developing investment strategies.	Opportunity excellent 200 employed $1,500/commission	Basic Math Bookkeeping Oral and Written Communications Accounting History Economics Statistics Business Finance	HS OJT COL	Insurance Salespeople Underwriters	Employers seek applicants who are mature and ambitious, and who can motivate people. Sales experience is very helpful. A college degree is becoming increasingly important. Licensing is required.
Store Salespeople* Display and sell merchandise in retail and wholesale stores. Provide information about the product and help the customer.	Opportunity very good 7,760 employed $1,100/$1,750	Mathematics Sales and Marketing Social Studies	HS OJT	Sales Representatives	Employers prefer high school graduates who have sales experience and initiative. A pleasant personality and a neat appearance are important.

Travel Agents Make travel arrangements which *meet their client's budget,* interests, and time schedule. They also issue tickets and collect payments.	Opportunity good 975 employed $1,250/$1,800	Mathematics Language Arts Social Studies Office Procedures Sales and Marketing	VOC	Ticket Agents Hotel Desk Clerks	Employers prefer applicants who have gone to travel school and who have clerical and computer skills. A pleasant manner and sales ability are very important

Clerical Occupations

Accounting and Statistical Clerks* Prepare numerical records for reports, research, financial statements, and payroll use.	Opportunity fair 3,450 employed $1,500/$2,050	Mathematics Business Administration and Finance Office Procedures	HS VOC ASSOC	Bookkeepers Accountants and Auditors General Office Clerks Mathematicians & Statisticians	Most employers require a high school diploma and additional training or related work experience. Good judgement, logical thinking, and good aptitude with numbers are important.
Bank Tellers* Handle money transactions for customers of banks or other financial institutions. Cash checks and accept deposits and payments. Pay out withdrawals. Balance the day's accounts and wrap money after banking hours.	Opportunity fair 1,330 employed $1,300/$1,400	Mathematics Business Administration and Finance Office Procedures	HS OJT VOC ASSOC	Loan Officers Cashiers and Grocery Checkers	Most employers require applicants to have at least a high school diploma. Some require at least six months of related work experience. Typing and computer skills are an asset. Tellers must be at least 18 years old to be bonded.
Bookkeepers* Maintain financial records for effective business management. Balance books and prepare summary reports. Handle banking and dispersal of cash and checks. Calculate payrolls. Prepare bills for customers. Prepare withholding, social security, and other tax reports.	Opportunity fair 2,910 employed $1,500/$2,050	Mathematics Office Procedures Business Administration and Finance	HS VOC ASSOC	Accounting and Statistical Clerks Accountants and Auditors	Most entry positions require a high school diploma plus additional courses in business, math, or bookkeeping. Data processing knowledge is helpful. Some clerks are promoted to this position from within the firm.
Claims Adjusters and Examiners Review and process loss or damage claims made against insurance companies. May specialize in specific types of insurance such as fire, auto, health, or life insurance.	Opportunity good 285 employed $2,200/$3,800	Mathematics Business Administration and Finance Language Arts Social Studies	OJT COL	Appraisers Underwriters Loan Officers	Applicants with a college degree are preferred. Experience in the field to be underwritten such as construction, medical, auto repair, and aviation is very helpful.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Collectors Locate people who have overdue bills and seek payment.	Opportunity very good 300 employed $1,300/$1,900	Mathematics Language Arts Office Procedures Social Studies Business Administration and Finance	OJT	Claims Adjusters and Examiners	Employers prefer personable yet assertive individuals who are even-tempered and persistent. Experience in working with the public is helpful.
Computer Operators* Load, monitor, and run computers to process data. Observe the machines for stoppage or faulty output.	Opportunity good 525 employed $1,900/$2,440	Mathematics Office Procedures Language Arts	HS OJT VOC ASSOC	Data Entry Operators Systems Analysts Computer Programmers	An applicant with a high school diploma who shows an interest and aptitude in computers may be hired. Advanced training beyond high school is sometimes required. Problem-solving skills and adaptability are important.
Cost Estimators Calculate the cost of labor and materials needed to perform services or to produce goods. These estimates are used in determining bids for contracts.	Opportunity good 230 employed $2,400/$4,000	Mathematics Technical Studies Business Administration and Finance Language Arts	COL	Construction Managers Production Superintendents Accountants and Auditors Engineers	Employers prefer applicants with a college degree in a related field in which they will be working. Ability to analyze and interpret data, especially blue-prints and design specifications, along with organizational skills are important.
Data Entry Operators* Transcribe information into a form suitable for processing by a computer. Information entered is usually taken from financial, statistical, or scientific documents.	Opportunity fair 400 employed $1,600/$1,850	Mathematics Office Procedures	HS OJT VOC ASSOC	Computer Operators Office Machine Operators Typists and Word Processors	Good typing skills are required. Employers prefer high school graduates; some require previous training or experience.
Dispatchers* Relay information and orders using two-way radio to coordinate the movement of aircraft, vehicles, freight, and people. Dispatchers maintain records of requests and services performed.	Opportunity good 800 employed $1,600/$2,280	Mathematics Language Arts Office Procedures Social Studies	OJT VOC	Telecommunications Operators Air Traffic Controllers	Many employers fill dispatching jobs through internal promotion. Knowledge of an area, radio equipment, and regulations that apply are beneficial. Some aircraft dispatchers must be FAA certified.
General Office Clerks* Perform a variety of clerical duties essential to office operations including typing, filing, and operating office machines.	Opportunity good 6,600 employed $1,350/$1,700	Office Procedures Mathematics Language Arts	HS OJT VOC	Typists and Word Processors Secretaries Receptionists	Most employers seek applicants with at least a high school diploma; some require business training or experience. A knowledge of computer and word processing skills and a neat appearance are important.

Hotel Desk Clerks Register hotel and motel guests, assign rooms, and take payments.	Opportunity very good 550 employed $1,100/$1,300	Office Procedures Mathematics	HS OJT	Hotel and Motel Managers Travel Agents Ticket Agents Receptionists Telecommunications Operators	Employers prefer applicants who have at least a high school diploma and who have some clerical skills. Neatness, a courteous and friendly manner, and a desire to help people are important.
Legal Secretaries* Prepare correspondence and legal papers such as summonses, complaints, motions, and subpoenas under the supervision of an attorney. They also may review legal journals and assist in other ways with legal research.	Opportunity good 500 employed $1,900/$2,700	Office Procedures Mathematics Language Arts	OJT VOC ASSOC	Secretaries Legal Assistants	Many employers require a typing speed of 60-80 words per minute with accuracy. Good skills in punctuation, grammar, and vocabulary are required as well as familiarity with legal terminology and processes.
Library Assistants Help librarians order, catalog, shelve, and check out library materials.	Opportunity good 500 employed $1,600/$2,000	Language Arts Social Studies Office Procedures Mathematics	HS OJT ASSOC COL	Librarians General Office Clerks Medical Record Technicians	A high school diploma or GED is the minimum requirement for most jobs. Some positions require one or two years of college. A few universities may require a four-year bachelor's degree.
Mail Carriers Collect and deliver letters and packages along assigned routes. Sort mail, complete delivery forms, collect charges, and obtain signatures on receipts for certain types of mail. May drive delivery vehicle.	Opportunity limited 360 employed $12.00/$14.00/hr. + 25% COLA	Mathematics Language Arts Office Procedures Driver Education	HS OJT	Postal Clerks	Must be a U.S. citizen, at least 18 years old, and have a high school diploma or GED. Must pass the federal postal service exam, a physical exam, and a driving test. Must have a good driving record.
Medical Secretaries Transcribe dictation, prepare correspondence, and assist physicians with reports, speeches, and articles. May be required to schedule appointments and prepare and maintain patient records.	Opportunity very good 200 employed $1,600/$2,300	Office Procedures Mathematics Science	VOC	Medical Records Technicians Secretaries Medical Assistants	Most employers require a knowledge of medical terminology and the ability to type at least 50 words per minute. Completing a medical secretary training program is sometimes required.
Messengers Deliver documents, packages, and other items to departments within a firm, to other businesses, or to customers.	Opportunity fair 250 employed $1,100/$1,350	Driver Education Language Arts Mathematics	OJT	General Office Clerks Mail Carriers Local Truck Drivers	A valid Alaska driver's license and good driving record are required for most jobs. Employers seek applicants who are neat appearing and personable.
Office Machine Operators* Use a variety of office machines such as calculators, photocopiers, and billing machines to speed the flow of paperwork.	Opportunity limited 320 employed $1,100/$1,550	Office Procedures	HS OJT	General Office Clerks Typists and Word Processors	Most employers prefer applicants who are high school graduates and who are experienced with office machines. Typing and adding machine skills are often required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Postal Clerks* Sort incoming and outgoing mail in post offices. Sell stamps and money orders. Weigh letters and parcels. Register, insure, certify, re-address, and forward mail.	Opportunity limited 860 employed $12.00/$14.00/hr. + 25% COLA	Mathematics Language Arts Office Procedures	HS OJT	Mail Carriers Shipping and Receiving Clerks	Must be a U.S. citizen, at least 18 years old, and have a high school diploma or GED. Must pass the federal postal service exam, a physical exam, and some must pass a driving test.
Receptionists* Greet callers, determine their needs, and refer them to the appropriate individual or department. An important function is to provide the public a good first impression of the organization. May also type, file, answer the phone, and distribute mail.	Opportunity very good 1,930 employed $1,300/$1,700	Office Procedures Language Arts Mathematics	HS OJT VOC	Typists and Word Processors Secretaries Telecommunications Operators Hotel Desk Clerks	A high school diploma or GED is normally required. A pleasant manner, neat appearance, clear speaking voice, and good judgement are important. Experience operating office machines is helpful.
Secretaries* Perform a wide variety of administrative and clerical tasks to keep an office functioning smoothly. Organize office workload, draft letters and reports, type, screen telephone calls, file, transcribe, and welcome visitors.	Opportunity good 6,250 employed $1,500/$2,200	Office Procedures Language Arts Mathematics	HS VOC ASSOC	Legal Secretaries Medical Secretaries Receptionists Typists and Word Processors	Most employers prefer applicants with at least a high school diploma. Typing or word processing skills of 50-80 words per minute and the ability to meet and deal professionally with people are often required. Good clerical skills are important.
Shipping and Receiving Clerks Keep records of incoming and outgoing merchandise and prepare merchandise for storage or shipment.	Opportunity good 1,510 employed $1,250/$1,780	Office Procedures Mathematics Language Skills	HS OJT	Stock Clerks Packers and Wrappers	A minimum of a high school diploma or GED is normally required. Clerical experience or knowledge of postal or parcel delivery services may be helpful. Some firms fill through internal promotion.
Stenographers* Take dictation by hand or machine and transcribe it into letters, reports, or other written materials.	Opportunity good 100 employed $1,700/$2,300	Office Procedures Language Arts Mathematics	VOC ASSOC	Typists and Word Processors Secretaries	Many are required to type 60 to 90 words per minute. Experience with transcribing equipment is sometimes required. Knowledge of specialized terms in the areas of medicine, law, or engineering may be required.

Stock Clerks* Maintain supplies for businesses that require goods or parts to be kept on hand. They receive, unpack, check, put away, store, and keep track of the inventory.	Opportunity good 3,560 employed $1,150/$1,590	Mathematics Language Skills Office Procedures	HS OJT	Cashiers and Grocery Clerks Shipping and Receiving Clerks	A high school diploma and related work experience is sometimes required. A pleasant manner and neat appearance is helpful.
Tax Preparers Prepare income tax returns for people and small businesses. May also represent clients before the Internal Revenue Service.	Opportunity good 85 employed $1,600/$2,300	Office Procedures Business Administration and Finance Mathematics Language Arts	OJT ASSOC COL	Accountants Auditors Bookkeepers Accounting and Statistical Clerks	A formal training program in tax preparation is often required. Some employers will train on the job.
Teacher Assistants Provide classroom and clerical assistance to elementary and secondary teachers.	Opportunity very good 3,200 employed $1,500/$1,700	Mathematics Office Procedures Language Arts Social Studies	HS COL	Elementary & Secondary Teachers Special Education Teachers	Clerical skills, a high school diploma, and the ability to work well with children generally are required.
Telecommunications Operators* Process and assist in telephone and telegraph communication services.	Opportunity good 820 employed $1,350/$1,850	Office Procedures Language Arts Mathematics	HS OJT	Receptionists Hotel Desk Clerks Dispatchers	Minimum of a high school education is required by most employers. A good work history and experience dealing with the public is important. A clear and pleasant voice is required.
Ticket Agents* Make reservations and sell tickets to people traveling on airplanes, trains, buses, or ships. Answer inquiries, check baggage, examine passports and visas, ensure passenger seating, and check in animals.	Opportunity excellent 1,220 employed $1,500/$1,650	Office Procedures Mathematics Social Studies Language Arts	OJT VOC	Travel Agents Dispatchers Hotel Desk Clerks	Formal training programs which include training on computer reservation systems may be required. Some employers may only require previous experience in dealing with the public. A professional appearance, a pleasant personality and a good attitude are important.
Typists and Word Processors* Produce reports and letters from materials that are written by other clerical, professional, or managerial staff. May compose routine correspondence. May proofread and make corrections when needed.	Opportunity limited 2,300 employed $1,600/$1,850	Office Procedures Language Arts Mathematics	HS VOC	General Office Clerks Data Entry Operators Office Machine Operators Secretaries Receptionists	Applicants usually must meet typing speed requirements of 40-60 words per minute. Most employers require graduation from high school. Some also require word processing training or experience.

Service

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Bartenders Mix and serve alcoholic beverages in bars and restaurants. May serve snacks. Often responsible for ordering liquor and other supplies.	Opportunity good 1,720 employed $1,400/$1,450	Basic Math Oral Communications Psychology Food Service English	OJT VOC	Waiters and Waitresses Restaurant Managers	Applicants should have a neat and clean appearance and be at least 21 years old. A courteous, outgoing manner and dependability are essential. Experience is important.
Building Maintenance Workers Repair and maintain plumbing, electrical fixtures, machinery, and the structures of commercial, industrial, and public buildings.	Opportunity very good 4,500 employed $1,500/$2,740	Shop and Crafts Technical Studies Mathematics	OJT APPREN VOC	Janitors	Related work experience is often specified. Training or experience in two or more craft occupations such as carpentry, welding, or electrical work is often required.
Buspersons Clear tables and counter areas in eating places to prepare for customers. Replenish linens, silverware, glassware, and dishes. Serve water and coffee.	Opportunity very good 575 employed $880/$910	Home Economics	OJT	Kitchen Helpers Waiters and Waitresses	Employers prefer applicants who are clean, neat, and able to work rapidly and with a friendly manner. More formal establishments may require previous experience.
Chefs and Dinner Cooks* Prepare and cook food in restaurants and other public and private establishments. Develop recipes and plan menus. Estimate and order food purchases.	Opportunity very good 2,620 employed $1,400/$1,540	Home Economics Mathematics Language Arts Office Procedures	OJT APPREN VOC	Short Order Cooks Bakers Kitchen Helpers	Formal education or apprenticeship training may be required. Employers generally seek neat, reliable applicants who are in good health and physical condition. Some are promoted from kitchen helper positions.
Child Care Workers Supervise and provide care and learning experiences for children in day care programs. Provide basic physical care to the very young. Maintain discipline and supervise eating and rest periods.	Opportunity good 2,530 employed $6.50/$7.60/hr.	Home Economics Health Social Studies	HS VOC	Elementary and Secondary Teachers Education Program Specialists Special Education Teachers	Child care workers in state licensed facilities are required to complete 12 hours of training annually. Centers receiving federal funding must hire workers who are at least 18 years old and they must have at least one year of supervised experience. Assistants and aides must be at least 15 years old and be supervised.

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Corrections Officers* Guard residents in prisons, jails, and halfway houses to prevent escape. Inspect to ensure that conditions are safe, sanitary, and secure. Escort prisoners to and from cells.	Opportunity very good 950 employed $2,200/$3,000	Social Studies Language Arts Mathematics Physical Education	HS OJT	Security Guards Law Enforcement Officers	Most positions require at least a high school diploma or GED. Applicants should be in good physical condition, at least 21 years old, possess a valid drivers license, and be able to pass an extensive background examination.
Counter Attendants Serve customers in fast food restaurants. Take and serve food and beverage orders, and receive payments. Some do limited cooking and food preparation.	Opportunity good 3,370 employed $900/$1,020	Home Economics Mathematics Language Arts	OJT	Buspersons Waiters and Waitresses Kitchen Helpers	Applicants should be neat and in good health. It is important to enjoy serving people. Some employers hire high school students for part-time or seasonal positions.
Dental Assistants* Help dentists prepare, examine, and treat patients. Sterilize and maintain instruments and prepare tray setups for dental procedures. Some may have laboratory and clerical duties.	Opportunity very good 530 employed $1,600/$2,200	Science Health Office Procedures Social Studies Mathematics	OJT VOC	Dental Hygienists Dental Laboratory Technicians	Some employers require formal training and certification; others will train on the job. A friendly, outgoing personality, good communication skills, and good chair side manner are important.
Firefighters* Fight fires to protect lives and property. Rescue people and provide emergency medical aid. May inspect buildings for fire safety. Educate the public about prevention measures and investigate causes of fires.	Opportunity good 640 employed $2,400/$2,900	Mathematics Language Arts Social Studies Physical Education Drivers Education	APPREN VOC ASSOC	Emergency Medical Technicians and Paramedics Forest Firefighters	Candidates must take competitive exams and pass rigorous health and physical qualifications for certification. Almost all employers require at least a high school diploma or GED.
Forest Firefighters Move dirt, chop brush, and cut down small trees to control the spread of forest or brush fires. When not fighting fires, they may build trails, cut brush, and plant trees.	Opportunity varies Employment varies $8.60/$10.00/hr	Physical Education Drivers Education	VOC OJT	Emergency Medical Technicians and Paramedics Firefighters	Almost all positions are seasonal. Excellent health and physical stamina is important. A "red card" which signifies completing state or federal training is often required.
Fish and Game Protection Officers Officers warn, cite, and arrest individuals suspected of violations and may seize fish, game, and equipment. They patrol their districts by boat, plane, or foot.	Opportunity limited 70 employed $2,300/$3,000	Social Studies Physical Education Mathematics Language Arts Science	VOC COL	Park Rangers Foresters Fish and Wildlife Technicians Law Enforcement Officers	Applicants for state and federal jobs must have experience or training in law enforcement or a college degree. Must meet strict physical requirements. A thorough background check is required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Flight Attendants Provide services to assure the comfort and safety of aircraft passengers. Greet passengers, verify tickets, and help passengers locate seating. Instruct passengers on how to use safety equipment and direct actions in the event of emergencies. May serve food and drinks.	Opportunity fair 150 employed $1,400/$3,000	Language Arts Mathematics Social Studies Home Economics	OJT ASSOC	Ticket Agents	Applicants must be at least high school graduates and in excellent health. Minimum age is generally between 18 to 21 years old. Height and weight requirements must be met.
Hair Stylists* Depending on their specialty, hair stylists shampoo, condition, cut, shape, style, tint, and straighten hair. Cosmetologists give manicures and scalp and facial treatments. They may remove unwanted facial hair and provide make-up analysis.	Opportunity very good 1,590 employed $1,250/$2,200	Home Economics Sales and Marketing Health Education Mathematics Office Procedures	VOC		Completion of an approved training program and a state license in either hairdressing, barbering, or cosmetology are necessary to practice.
Home Health Aides Provide personal care and home management services to allow patients to live in their own homes. May work under the supervision of a registered nurse.	Opportunity very good 420 employed $1,400/$1,850	Home Economics Health	VOC ASSOC	Community Health Aides Licensed Practical Nurses Nursing Assistants	Certification is required when providing home health aide services. Employers prefer applicants who have at least a high school diploma [illegible] courses in home economics.
Janitors Keep buildings clean and orderly. May have to empty wastebaskets, sweep, mop, vacuum, dust, wax, and polish. Some jobs require lawns to be mowed, snow to be shoveled, and minor mechanical repairs to be made.	Opportunity very good 4,700 employed $1,200/$1,480	Shop and Crafts	OJT	Room Cleaners Building Maintenance Workers	Work experience is preferred, but most employers are willing to hire inexperienced applicants who have steady work records, a neat appearance, and a willingness to do the job.
Kitchen Helpers Assist cooks by doing basic food preparation tasks. May wash, peel, and chop fruits and vegetables. May prepare salads, soup stocks, sauces, and dressings.	Opportunity very good 2,240 employed $1,050/$1,120	Home Economics	OJT	Chefs and Dinner Cooks Short Order Cooks Waiters and Waitresses Buspersons	Applicants who are neat, clean appearing, and show a desire to learn and work hard are preferred. A record of reliability is helpful. An appreciation for and desire to create fine food is important.

Law Enforcement Officers* Responsible for enforcing laws and maintaining order. Primary duties are to protect life and property. Most officers work on patrol or traffic duty.	Opportunity good 1,450 employed $2,500/$3,600	Social Studies Physical Education Mathematics Language Arts	HS OJT ASSOC COL	Village Public Safety Officers Corrections Officers Fish and Game Protection Officers Health and Safety Inspectors	Minimum of a high school diploma or GED is required. Some employers require applicants to have college training. An extensive background investigation and a polygraph examination is required.
Massage Therapists Rub, knead, and use other massage techniques to stimulate circulation and to relax muscles for their customers.	Opportunity good Employment not available $40.00/$65.00 per massage hr.	Health Home Economics	VOC	Chiropractors Physical Therapists	Credentials are important. Employers require properly trained individuals. National certification in therapeutic massage and body work is often required.
Medical Assistants* Assist physicians and help patients by performing clinical, hospital, laboratory, or office duties.	Opportunity very good 425 employed $1,500/$2,200	Health Science Mathematics Language Arts Social Studies	VOC ASSOC	Medical Secretaries Physician Assistants Registered Nurses Nurse Practitioners Licensed Practical Nurses Community Health Aides	Most employers prefer graduates of medical assistant programs or applicants who have related experience. Some require certification.
Military Enlisted Personnel* Work in various occupations in the Army, Navy, Air Force, Marine Corps, and Coast Guard. Members bear the responsibility for carrying out military operations in defense of the U.S. and to support foreign policy objectives.	Opportunity fair 20,820 Alaska based $1,350/$2,200	Physical Education Mathematics Language Arts Social Studies	HS OJT	Military Officers	Applicants must take the Armed Services Vocational Aptitude Battery (ASVAB) test. More than 90 percent of the jobs in the military require a high school diploma or GED.
Nursing Assistants Assist in the care of hospital, clinic, and nursing home patients. Most are supervised by nursing or medical staff.	Opportunity good 1,700 employed $1,500/$1,700	Health Science Social Studies Mathematics Language Skills	OJT VOC ASSOC	Physician Assistants Registered Nurses Nurse Practitioners Licensed Practical Nurses Emergency Medical Technicians and Paramedics Psychiatric Aides Home Health Aides	Most employers require experience, training, or both. Certification is often required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Pest Control Workers Set traps and release or spray poisonous gases or chemicals to kill unwanted plants, insect pests and vermin.	Opportunity very good 25 employed $1,100/$1,650	Agriculture Science Health Mathematics	OJT	Building Maintenance Workers Groundskeepers and Gardeners Farmers and Ranchers Sanitarians	Most employers prefer applicants who are experienced in pest control, although some will hire applicants with no experience and will train. State licensing may be required.
Psychiatric Aides Assist in the care and rehabilitation of the mentally ill and the developmentally disabled. Help patients in their personal as well as their educational and recreational needs.	Opportunity very good 340 employed $1,600/$2,300	Health Social Studies Science Mathematics Language Arts	OJT VOC ASSOC	Licensed Practical Nurses Nursing Assistants Home Health Aides Community Health Aides Psychologists	Must be at least 18 years old. Most employers require applicants to have at least a high school diploma. Work experience as a nursing assistant is very helpful.
Recreation Guides Organize and conduct hunting, fishing, hiking, float, or similar types of trips for adventurers and tourists in scenic and wilderness areas. Due to the remoteness and unpredictable weather conditions, knowledge of the country is extremely important.	Opportunity good 2,065 registered guides $75.00/$150.00/day	Physical Education Science Health Mathematics Language Arts Shop and Crafts	OJT	Recreation Directors and Supervisors Recreation Leaders Tour Guides	Most begin as helpers and then acquire on-the-job experience in order to advance. Knowledge of the outdoors and specific skills relative to the type of outfitting or guiding service is desirable. State or federal licensing is often required.
Room Cleaners Clean rooms, including the furnishings, floors, and lavatories, in hotels, motels, and medical facilities. Some launder soiled linens.	Opportunity very good 2,400 employed $1,000/$1,650	Home Economics Health	OJT	Janitors	A high school diploma or GED can often improve an applicant's chances of getting a job. A general knowledge of cleaning methods, materials, and equipment can be helpful.
Security Guards* Protect property from illegal entry, theft, and fire. May patrol and inspect buildings and grounds, checking windows, doors, and gates to determine that they are secure. May use monitoring equipment to watch several locations simultaneously.	Opportunity very good 1,750 employed $1,200/$2,000	Physical Education Social Studies Mathematics Language Arts	HS OJT	Law Enforcement Officers Correctional Officers and Jailers	Applicants must be in good physical health and emotionally stable. An extensive background investigation is normally required. State licensing is required for armed guards.

Short Order Cooks Prepare foods such as hamburgers, chicken, and hotcakes in restaurants, cafes, or fast food establishments. Workers in small establishments may also take orders and serve customers.	Opportunity good 1,470 employed $1,000/$1,030	Home Economics Mathematics	OJT	Kitchen Helpers Chefs and Dinner Cooks Counter Attendants	Most employers look for neat appearing, healthy, and pleasant applicants. Some prefer to hire experienced short order cooks, but others are willing to train inexperienced workers.
Tour Guides Guides may give tours of glaciers, tundra, parks, historic buildings and sites, villages, towns, and cities. Since most visitors to Alaska arrive by ship or airplane, guided tours usually include transportation.	Opportunity very good 660 employed $1,400/$1,900	Social Studies Driver Education Language Arts Mathematics	HS ASSOC	Bus and Taxi Drivers Park Rangers Recreation Guides	Employers prefer neat, polite, articulate, and enthusiastic applicants. Positions that require driving may have a minimum age requirement of 21 or 25. Experience is preferred but not always required.
Village Public Safety Officers Provide rural or bush communities in Alaska with law enforcement, firefighting, emergency medical care, and search and rescue services. May provide public safety education programs in water and boat safety, hunter and firearm safety, and animal control.	Opportunity fair 86 employed $1,750/$2,000	Physical Education Social Studies Health Mathematics Language Arts	HS OJT	Emergency Medical Technicians and Paramedics Law Enforcement Officers Fish and Game Protection Officers Firefighters	Applicants are usually residents of the area to be served; at least 21 years old with no felony convictions in the last five years and no misdemeanor convictions in the last two years.
Waiters and Waitresses Serve food and beverages to customers. Greet patrons, discuss menu, take orders, serve food, make out checks, and collect payment. May clear and set tables.	Opportunity very good 3,790 employed $890/$905	Home Economics Mathematics	OJT	Counter Attendants Bartenders Buspersons	Applicants should have a clean and neat appearance, a pleasant personality, and physical stamina. Establishments that serve alcoholic beverages require workers to be at least 21 years old.

Fishing, Forestry and Agricultural Occupations

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Animal Caretakers Take care of animals in animal hospitals, shelters, pet shops, and zoos. They often feed, water, bath, groom, and exercise the animals. May treat minor injuries and ailments, repair equipment and cages, and clean animal quarters.	Opportunity very good 80 employed $1,050/$1,430	Agriculture Science Mathematics Language Arts	HS VOC ASSOC	Veterinarians	No specific education or experience is required for most positions, although a high school diploma and knowledge of animal care is helpful. Veterinarians may require a two-year animal technician degree.
Aquaculture Workers Assist fishery biologists in the protection and enhancement of fish stock. Hatchery workers strip eggs and milt, fertilize and care for eggs, feed young fish, clean ponds, and maintain the hatchery grounds and equipment.	Opportunity fair 200 employed $1,600/$2,200	Agriculture Science Mathematics Language Arts	OJT VOC ASSOC	Fish and Wildlife Technicians Forestry Technicians Biologists	Most employers prefer applicants with work experience in fisheries biology or a related field. Carpentry, machinery operation and maintenance, small boat operation, and fishing skills are helpful.
Choker Setters Fasten cables around logs so they can be haul[illegible]om the cutting area. May have to clear dirt and brush away before attaching the cables. May help install or take down yarding equipment.	Opportunity declining 410 employed $12.50/$13.00/hr	Agriculture Shop and Crafts Physical Education Mathematics Science	OJT VOC	Fallers and Buckers Yarding and Loading Workers	Must be at least 18 years old and have the necessary physical strength to do the work. Skills are usually learned on the job.
Commercial Fishers Catch primarily fish, shrimp, and crab using nets, hooks, and pots. Principal summer catch in Alaska are salmon, shrimp, and halibut. Crab and pollock constitute the main winter catch.	Opportunity fair 34,850 commercial crew licenses 17,200 commercial boats Earnings vary by gear type and catch	Agriculture Shop and Crafts Technical Studies Mathematics	OJT VOC	Ship Officers and Engineers Deckhands	Employers prefer applicants who have commercial fishing experience and who are physically able to do the job. Knowledge of engines, refrigeration, electronics, and hydraulic equipment is helpful.
Fallers and Buckers Fallers determine the direction for the tree to fall and then down the tree. Buckers work on downed trees removing the limbs and cutting the logs into specified lengths.	Opportunity declining 600 employed $120.00/$200.00/day	Agriculture Shop and Crafts Science Mathematics	OJT VOC	Choker Setters Log Handling Workers	Workers must be at least 18 years old. Employers prefer previous logging experience as a choker setter or log handling worker. Must know how to operate a chain saw.

Farmers and Ranchers Raise crops and livestock for market. Duties and workload vary by the size of the operation and the seasons of the year. Often are required to assume different roles such as manager, crew boss, mechanic, laborer, and bookkeeper.	Opportunity limited 800 farm/ranch workers 560 farms & ranches workers: $870/$1,150 owners: $2,500 avg.	Agriculture Shop and Crafts Mathematics Science Language Arts	VOC ASSOC COL		Employers prefer applicants who have farm or ranch experience. Operating and maintaining machinery is a plus. Programs such as Future Farmers of America and 4-H are excellent ways of gaining knowledge and experience.
Forestry Technicians Assist foresters in managing and taking care of forest lands and resources. Help in laying out roads and establishing forest and watershed boundaries. May survey and mark trees for harvest.	Opportunity limited 460 employed $1,600/$2,400	Agriculture Shop and Crafts Science Mathematics Language Arts	OJT VOC	Foresters Fish and Wildlife Technicians Aquaculture Workers	Prior work experience in logging, fire fighting, or forest technology is important. Knowledge of plants is helpful. A valid drivers may be required.
Groundskeepers and Gardeners Maintain and care for plants, grass, shrubs, and trees on residential, commercial, and public property. May cut grass, water lawns, fertilize soil, and prune trees.	Opportunity good 520 employed $1,200/$1,300	Agriculture Mathematics	OJT APPREN VOC ASSOC	Horticultural Workers Floral Designers	Related experience is preferred. Knowledge of plants and experience operating equipment is especially helpful. A driver's license is almost always required.
Log Handling Workers Sort and prepare logs for sawing and processing at pulp mills and sawmills. Use hoists and conveyors to move logs; power saws to cut logs to standard length; and barker machines to remove bark.	Opportunity declining 460 employed $11.80/$14.70/hr	Agriculture Shop and Crafts Science Mathematics	OJT	Choker Setters Yarding and Loading Workers Fallers and Buckers Pulp and Paper Workers	Most positions are filled by promoting laborers. Applicants must be 18 years old and physically fit to do the work.

Mechanics and Repairers

Aircraft Mechanics* Inspect, service, repair, and overhaul aircraft components including the engine, fuselage, wings, landing gear, flight controls, and electrical and hydraulic systems.	Opportunity very good 1,150 employed $2,000/$3,040	Mathematics Science Shop and Crafts Technical Studies	OJT VOC	Automobile Mechanics Truck and Heavy Equipment Mechanics Airline Ground Crew	Employers prefer FAA certified mechanics, although some provide on-the-job training which may lead to a mechanic's certificate in 18 to 30 months.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Appliance Repairers Service and repair appliances that are typically found in the home. Will locate the malfunction and determine if it is worth repairing. Most repairers work with minimal direct supervision.	Opportunity limited 120 employed $1,400/$2,500	Shop and Crafts Technical Studies Mathematics Science	OJT VOC	Electronics Technicians	Many repair shops hire only experienced workers. A strong background in electricity or electronics is helpful. A neat appearance and a driver's license is usually required.
Automobile Mechanics* Diagnose mechanical failures in cars. Adjust, repair, or replace parts. Some perform all types of repairs, while others may specialize in certain areas such as electrical systems, automatic transmissions, or brakes.	Opportunity good to very good 1,760 employed $1,620/$2,420	Shop and Crafts Technical Studies Mathematics Science	OJT APPREN VOC	Truck and Heavy Equipment Mechanics Aircraft Mechanics Small Engine Repairers Marine Mechanics Service Station Attendants Vehicle Cleaners	Most employers prefer applicants who have at least a high school diploma. Technical training in automotive mechanics is preferred, especially training in electronics. Previous related work experience is helpful.
Auto Body Repairers* Repair or replace damaged sections on auto bodies and frames. Remove dents, weld metal, replace parts, and patch and repaint surfaces. May install glass and repair or replace vinyl top coverings.	Opportunity very good 365 employed $1,800/$2,400	Shop and Crafts Art Mathematics	OJT APPREN VOC	Glaziers Automobile Mechanics Welders	Many employers prefer experienced repairers. Some employers require applicants to have completed community college or vocational training programs in auto body repair.
Commercial Divers* Work underwater in various jobs including research, construction, boat repair, harvesting marine life, or on salvage operations. Most use scuba gear or a diving helmet with an air line to the surface.	Opportunity good 50 full-time 100 part-time $50.00/$75.00 per diving hr.	Physical Education Science Shop and Crafts Mathematics	OJT VOC	Commercial Fishers Welders Marine Mechanics Biologists	Employers prefer applicants who have completed formal training in commercial diving and are nationally certified or who have equivalent training and experience in the field.
Heating and Cooling System Mechanics* Install and repair heating, air conditioning, and refrigeration systems in residential and commercial buildings. Some workers specialize in either refrigeration or heating work.	Opportunity good 165 employed $2,150/$2,800	Technical Studies Shop and Crafts Mathematics Science	OJT APPREN VOC	Electricians Sheet Metal Workers Plumbers and Pipefitters Appliance Repairers	Employers prefer applicants who have experience or who have received formal training through an apprenticeship or through an educational program at a community college or vocational school. Some employers hire through a union hall.

Locksmiths Open, repair, install, or replace conventional and electronic locks. May open and repair safes. May install and repair security or controlled access systems.	Opportunity good 50 employed $1,340/$2,400	Shop and Crafts Mathematics	OJT	Jewelers Precision Instrument Repairers	Experienced or trained locksmiths are preferred. Apprenticeships last about four years. Many jobs require bonding so a clean police record is important.
Marine Mechanics* Repair and service motorboat engines, transmissions, steering controls, and other types of mechanical equipment. Some may overhaul propellers and align shafts. Others repair and paint hulls and rig masts.	Opportunity good 85 employed $1,600/$2,230	Shop and Crafts Technical Studies Mathematics Science	OJT VOC	Small Engine Repairers Automobile Mechanics	Employers prefer mechanically inclined applicants who have an interest in or who have experience with boats. Some require formal mechanical training or certification from a factory authorized school.
Millwrights Install, repair, dismantle, and replace industrial machinery and heavy equipment. Responsibilities require a wide range of skills from blueprint reading and pouring concrete to diagnosing and solving mechanical problems.	Opportunity excellent 1,200 employed $2,500/$2,850	Mathematics Shop and Crafts Technical Studies Science	OJT APPREN	Truck and Heavy Equipment Mechanics Oilers	An apprenticeship program and prior mechanical experience are the minimum requirements of most employers. Some openings are filled by promoting from within the firm. Some are hired through union halls.
Office Machine Repairers* Service and repair office equipment such as typewriters, calculators, cash registers, copying equipment, postage meters, and personal computers.	Opportunity good 140 employed $1,700/$2,300	Shop and Crafts Technical Studies Mathematics	OJT VOC	Appliance Repairers Computer Maintenance Technicians Electronic Technicians Radio and TV Service Technicians	Employers prefer applicants who have experience and training. Employers who do train seek those with some knowledge of mechanics, electricity, or electronics.
Oilers Gas, oil, and lubricate moving parts of industrial, construction, and transportation equipment. Tune, adjust, and perform minor repairs. Assist mechanics with major repairs.	Opportunity very good 280 employed $2,000/$2,380	Shop and Crafts Technical Studies Mathematics	OJT APPREN	Ships Officers and Engineers Deckhands Heavy Equipment Operators Truck and Heavy Equipment Mechanics	Most construction and mining companies hire through union halls. The Alaska Marine Highway requires at least 18 months of sea duty in a mechanical position.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Precision Instrument Repairers* Repair, adjust, or replace instruments that measure variables such as time, weight, pressure, flow, and temperature. Work is normally divided between regular inspection and preventive maintenance.	Opportunity good 470 employed $2,400/$3,300	Technical Studies Shop and Crafts Mathematics Science	OJT APPREN VOC	Office Machine Repairers Computer Maintenance Technicians Microcomputer Support Specialists Broadcast Technicians Electronics Technicians Locksmiths	Employers prefer high school graduates who have technical training or related work experience.
Radio and TV Service Technicians* Install and repair audio and visual electronic equipment. Use diagnostic equipment to locate the source of malfunction. Replace faulty components using a wide variety of hand tools. Tune audio and visual receivers.	Opportunity limited 40 employed $1,700/$2,400	Shop and Crafts Technical Studies Mathematics Science	OJT APPREN VOC	Computer Maintenance Technicians Electronic Technicians	Most employers require applicants with experience or technical training and who can work effectively with customers. Certification is helpful but not usually required.
Small Engine Repairers* Service and repair engines that are used on such items as motorcycles, chain saws, and snow machines. Repairs may consist of minor adjustments to a complete overhaul.	Opportunity fair 230 employed $1,500/$2,160	Mathematics Shop and Crafts Science	OJT VOC	Automobile Mechanics Truck and Heavy Equipment Mechanics Marine Mechanics	Employers look for applicants who have mechanical aptitude and have an interest related to their specialty, such as motorcycle riding. Often it takes two to three years before trainees become fully qualified mechanics.
Telephone Installers and Repairers* Install, service, or remove telephones and switchboard systems in homes and offices.	Opportunity limited 105 employed $2,200/$2,530	Shop and Crafts Technical Studies Mathematics Science	OJT APPREN	Line Installers and Repairers	Many are hired through union halls. Some positions are filled by promotion from within a firm. A valid driver's license and a good driving record are important.
Truck and Heavy Equipment Mechanics* Maintain and repair trucks, buses, and heavy equipment. Repairs vary from simple adjustments and tuneups to complete engine and equipment overhauls.	Opportunity good 1,850 employed $2,300/$2,840	Shop and Crafts Technical Studies Mathematics	OJT APPREN VOC	Automobile Mechanics Aircraft Mechanics Marine Mechanics	For most entry jobs, employers prefer applicants who have completed apprenticeship or vocational training. Some provide on-the-job training to applicants who have basic mechanical aptitude.

Vehicle Cleaners Maintain the appearance of automobiles, buses, and trucks by cleaning and washing them. Most work in car lots, car rental agencies, or car washes. Some perform minor maintenance.	Opportunity good 440 employed $1,000/$1,230	Shop and Crafts Home Economics	OJT	Automobile Mechanics Service Station Attendants Room Cleaners Automobile Salespeople	Many employers require a driver's license and a good driving record. Skills are usually learned on the job.

Construction, Mining and Drilling Occupations

Bricklayers* Build walls, fireplaces, chimneys, arches, and piers using masonry materials and mortar. Stonemasons build stone walls, and set stone floors and exteriors. Tile setters set tile for practical and decorative use.	Opportunity good 100 employed $14.00/$21.00/hr.	Shop and Crafts Technical Studies Mathematics	OJT APPREN VOC	Cement Masons Floor and Carpet Layers Plasterers and Drywall Installers	Most employers prefer applicants who have formal training in bricklaying or who are experienced. Applicants must be in good physical condition. A driver's license may be required.
Carpenters* Perform work which is basic to most building construction. They erect wood framework in buildings; build forms for concrete; and erect partitions, studs, joints, drywalls, and rafters. They must be very skillful as "finish" work is visible and often involves expensive materials.	Opportunity good 2,700 employed $13.00/$21.00/hr.	Shop and Crafts Technical Studies Mathematics	OJT APPREN VOC	Plasterers and Drywall Installers Roofers Insulation Installers	Employers look for applicants with experience or formal training in carpentry. Good physical condition and ability to follow instructions are important. Some employers may require a driver's license.
Cement Masons* Shape and smooth fresh concrete surfaces on construction projects such as sidewalks, walls, highways, and dams.	Opportunity good 85 employed $13.00/$20.00/hr.	Shop and Crafts Mathematics	OJT APPREN	Bricklayers Construction Laborers Plasterers and Drywall Installers	Employers seek applicants who are in good physical condition and who have formal training or experience doing concrete work. Some hiring is done through union halls.
Construction Laborers Help craft workers construct buildings, highways, and pipelines. May load and unload materials, shovel dirt or other types of fill, dismantle and erect scaffolding, and pour and spread concrete.	Opportunity good 1,800 employed $8.50/$10.00/hr.	Shop and Crafts Technical Studies Physical Education Mathematics	OJT	Bricklayers Cement Masons Carpenters Plumbers and Pipefitters	Applicants must be in good physical condition. Most jobs require minimum training. A few employers do require experience and general knowledge of construction methods and materials.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Electricians* Install wiring and maintain electrical equipment such as generators and lighting systems in good working order.	Opportunity very good 1,300 employed $17.60/$20.70/hr.	Technical Studies Shop and Crafts Mathematics Science	APPREN	Line Installers and Repairers Broadcast Technicians Radio and TV Service Technicians	Most employers prefer applicants who are enrolled in an apprenticeship program or who are qualified as journey-level electricians. Some may hire from union halls.
Floor and Carpet Layers Apply carpeting, linoleum, formica, and tile to floors, counter tops, and other surfaces.	Opportunity varies 30+ employed $10.50/$18.00/hr.	Shop and Crafts Mathematics	OJT APPREN	Plasterers and Drywall Installers	Most employers prefer reliable and experienced workers although some employers will train workers. Related training or work experience enhances opportunities.
Glaziers Use hand and power tools to install windows, doors, and mirrors in buildings and vehicles.	Opportunity very good 80 employed $9.50/$14.00/hr.	Technical Studies Shop and Crafts Art Mathematics	OJT APPREN	Bricklayers Painters and Paperhangers Construction Laborers	Applicants who are experienced or who have completed a related apprenticeship or vocational school program are preferred.
Insulation Installers Paste, wire, tape, or spray insulation into structures and onto surfaces to exclude or retain heat. Some workers may work with asbestos fibers.	Opportunity good 70 employed $10.75/$16.00/hr.	Mathematics Shop and Crafts	OJT APPREN	Plasterers and Drywall Installers Floor and Carpet Layers Roofers Carpenters	Most employers require applicants to be in good physical condition and have a driver's license. Skills are learned either informally on the job or through an apprenticeship program.
Ironworkers* Assemble and erect steel framework and other metal parts in bridges, buildings, or in other types of structures.	Opportunity limited 30 employed $2,300/$4,000	Shop and Crafts Technical Studies Mathematics Science	OJT APPREN	Boilermakers Sheet Metal Workers Welders	Most employers prefer to hire trained or experienced applicants through a union hall. Some jobs require a welding certificate.
Line Installers and Repairers* Install, service, and repair electrical, telephone, television, or other types of communication transmission systems for businesses and residential customers.	Opportunity limited 635 employed $14.50/$15.60/hr.	Technical Studies Shop and Crafts Mathematics	OJT APPREN	Electricians Broadcast Technicians Telephone Installers and Repairers	Most employers hire trained or apprenticed workers. A good background in mathematics and being in good physical condition are important.

Mine Workers Remove coal and minerals from surface and underground mines. Surface operations include quarry, open pit, and placer mining. Underground mining is either conventional, using explosives, or continuous, using machines.	Opportunity good 4,100 employed $11.00/$15.70/hr.	Shop and Crafts Mathematics Science	OJT VOC	Heavy Equipment Operators Construction Laborers	Entry-level applicants must be at least 18 years old and in good physical condition. Because of insurance regulations, some employers will not hire workers under 25 years old.
Painters and Paperhangers Apply paints and wall coverings to decorate and protect wall and ceiling surfaces.	Opportunity good 840 employed $10.00/$14.00/hr.	Art Shop and Crafts Language Arts Mathematics Science	OJT APPREN	Plasterers and Drywall Installers	Most employers require applicants to be in good physical condition. Some require training or experience in the trade.
Petroleum Derrick Operators Rig derrick equipment and maintain pumps to circulate drilling mud through the well. Are second in command of a four- or five-person drilling crew.	Opportunity good 680 employed $16.00/$20.00/hr.	Shop and Crafts Science Mathematics Science	OJT	Petroleum Helpers Rotary Drillers	Most begin as roustabouts (laborers) or drilling helpers (roughnecks) and work their way up as they gain experience.
Petroleum Helpers Perform a wide variety of manual tasks in oil and gas field operations. Petroleum helpers may clean machinery, dig holes and trenches, mix and pour concrete, load and unload vehicles, clean up spilled oil, and paint equipment.	Opportunity good 1,300 employed $12.30/$14.70/hr.	Shop and Crafts Mathematics Science	OJT VOC	Petroleum Derrick Operators Rotary Drillers Construction Laborers	Applicants must be at least 18 years old and in good physical condition. Employers prefer applicants with previous oil field or mechanical repair experience. Community college training in petroleum technology is also helpful.
Plasterers and Drywall Installers Prepare and apply smooth or textured finishes to walls and other building surfaces.	Opportunity fair 290 employed $11.50/$22.00/hr.	Shop and Crafts Technical Studies Mathematics	OJT APPREN	Painters and Paperhangers Carpenters Cement Masons	Applicants should be in good physical condition. Most employers prefer related experience or training. A drivers's license is sometimes required.
Plumbers and Pipefitters* Install and repair pipe systems used to carry water, gas, steam, air, and to dispose of waste.	Opportunity good 1,340 employed $14.50/$16.00/hr.	Shop and Crafts Technical Studies Mathematics	OJT APPREN	Sheet Metal Workers Millwrights Heating and Cooling System Mechanics Welders	Most employers prefer applicants who have completed an apprenticeship program. Some may hire applicants who learned their skills while working as helpers with people in the trade.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Roofers Apply composition roofing, wood shingles, and other materials to the roofs of buildings. May specialize in one type of roof construction such as shingle, metal, tile, or slate	Opportunity good 130 employed $12.50/$19.00/hr.	Shop and Crafts Mathematics	OJT APPREN	Construction Laborers Carpenters	Most employers prefer applicants with related experience or training. Skills are learned as a roofer's helper or in a formal apprenticeship program.
Rotary Drillers Operate machinery used to drill gas, oil, water, or geothermal wells. Some drillers work to open hard rock mines for mineral exploration.	Opportunity varies 310 employed $13.00/$15.00/hr. (non-oil & gas) $22.50/$25.00/hr. (oil & gas)	Shop and Crafts Mathematics Science	OJT	Petroleum Helpers Petroleum Derrick Operators Mine Workers	At least two years of on-the-job training as a drilling helper are required to qualify for a rotary driller position on an oil drilling crew.

Production Occupations

Aircraft Assemblers Assemble, install, test, and inspect various sections of aircraft including the tail, wing, fuselage, engine and electronic components.	*-National Information-* Opportunity limited 32,000 employed $17.73/hr. average (Washington state offers nearest employment opportunities)	Mathematics Technical Studies Shop and Crafts Science	OJT VOC	Aircraft Mechanics Aerospace Engineers	Most employers prefer applicants who have at least a high school diploma or GED and mechanical or work related experience. Aircraft assembly also requires specific on-the-job training.
Bakers Mix and bake ingredients to produce breads, pastries, and other baked goods.	Opportunity excellent 410 employed $1,200/$1,540	Home Economics Mathematics Science	OJT APPREN VOC	Chefs and Dinner Cooks	Employers prefer neat, reliable applicants who are in good health and physical condition. Some employers require formal education or apprenticeship training.
Boilermakers* Build or assemble steam boilers, storage tanks, and other large containers that hold liquids and gases. Boilermakers also repair boilers and keep them working.	Opportunity limited 25 employed $2,500/$3,600	Shop and Crafts Technical Studies Science Mathematics	OJT APPREN	Ironworkers Sheet Metal Workers Welders Millwrights Machinists Plumbers and Pipefitters	Most employers prefer trained or experienced people. Many use union hiring halls and some require an operator's license.

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Cannery and Frozen Food Workers Sort, preserve, and pack food products. In Alaska, the type of food is almost exclusively limited to fish and shellfish.	Opportunity excellent 6,850 employment $1,050/$1,200	Mathematics Home Economics	OJT	Food Processors Packers and Wrappers	Food processing or handling experience is helpful but not required. Best employment opportunities occur during the peak summer months.
Dental Laboratory Technicians* Make and repair dentures, crowns, and bridges to restore or replace teeth. Most specialize in a particular phase such as crown, bridge, denture work, ceramics, metal work, or orthodontics.	Opportunity limited 90 employed $1,300/$2,700	Mathematics Science Language Arts Health	OJT APPREN VOC	Dentists Dental Hygienists Dental Assistants	Graduation from an accredited two year program in dental technology increases job opportunities. Most frequently in demand are denture, ceramics, or crown and bridge specialists.
Food Processing Workers Prepare raw foodstuffs and combine ingredients to make various food products. Workers may tend chopping, mixing, or cooking machines; watch conveyor belts; or package food.	Opportunity excellent 780 employed $1,470/$2,000	Home Economics Mathematics Science	OJT	Cannery and Frozen Food Workers Packers and Wrappers	Experience is helpful but not required. Most skills are acquired on the job. Good health and stamina are important.
Jewelers Make and repair jewelry such as rings, bracelets, necklaces, and watches. Watchmakers repair, clean, and calibrate watches and clocks.	Opportunity limited 40 employed $1,500/$2,200	Shop and Crafts Art Sales and Marketing Home Economics Mathematics	OJT APPREN VOC	Small Business Operators Handcrafters	Most employers require experience gained either through a formal apprenticeship or through informal on-the-job training. Employers prefer applicants who can be bonded.
Machinists* Machinists craft precision parts from suitable metals using machine tools. Use boring, milling, drilling, and grinding tools to make or repair metal pieces, tools, or machines.	Opportunity excellent 326 employed $2,200/$2,520	Shop and Crafts Technical Studies Mathematics Science	OJT APPREN VOC	Millwrights	Completing an apprenticeship, vocational training, or several years of on-the-job training is necessary.
Meat Cutters Prepare meat, fish, and poultry for wholesale and retail markets. Meat cutters in retail food stores may stock meat display cases and help customers.	Opportunity good 475 employed $1,600/$2,300	Agriculture Sales and Marketing Home Economics Mathematics	OJT APPREN VOC	Packers and Wrappers	Experience is usually required. Physical stamina and good health are important. Most enter this occupation through an apprenticeship or on-the-job training.
Opticians* Opticians prepare, fit, and sell corrective lenses and eyeglasses. Dispensing opticians fit glasses and sell frames. Optical technicians grind, polish, and cut lenses and mount them in frames.	Opportunity very good 110 employed $1,500/$2,000	Mathematics Science Language Arts Shop and Crafts	APPREN VOC ASSOC	Optometrists	Many employers seek applicants who have completed a training program at an accredited school with courses in optics. State licensing is required.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Petroleum Processors Run machines to change crude oil into gasoline, fuel oil, or other home and industrial products. Currently in Alaska, crude oil is refined into jet and diesel fuels, gasolines, and asphalt.	Opportunity fair 730 employed $2,850/$3,600	Mathematics Science Shop and Crafts	OJT VOC	Stationary Engineers Water and Wastewater Plant Operators	No formal education, training, or experience is required for most entry positions. Training usually occurs on the job. Vocational courses in plant operation or mechanical trades may improve an applicant's employment prospects.
Photofinishers* Develop film and make photographic prints or slides.	Opportunity very good 125 employed $1,020/$1,500	Art Shop and Crafts Mathematics Science Language Arts	OJT ASSOC	Photographers	Many large processing firms provide training. Smaller and more specialized shops prefer trained applicants.
Printing Production Workers* Operate and maintain equipment used to print on paper, metal, and other materials.	Opportunity very good 430 employed $1,500/$2,200	Shop and Crafts Office Procedures Mathematics	OJT APPREN VOC ASSOC	Photographers	Employers prefer applicants who have completed an apprenticeship or vocational training program or who have related experience.
Production Assemblers Perform one or more assembly operations to mass produce goods such as automobiles, aircraft, and appliances.	Opportunity limited 205 employed $1,180/$1,900	Shop and Crafts Mathematics	OJT	Aircraft Assemblers	A high school diploma or completion of vocational training is preferred by most employers. Promotion to supervisor is likely for those with supervisory skills.
Quality Control Inspectors* Examine products to assure standards are met. Monitor all phases of processing, manufacturing, and production. May enforce laws and regulations.	Opportunity good 200 employed $1,900/$3,100	Science Language Arts Shop and Crafts Technical Studies Social Studies Mathematics	HS OJT APPREN COL	Science Technicians Production Superintendents	Qualifications vary depending on the industry. Some require a college degree while others may only require experience in production.
Sheet Metal Workers* Assemble, install, and repair products or equipment made of sheet metal, such as ducts for heating, cooling, and ventilation systems and stamped metal for roofing and siding.	Opportunity good 160 employed $2,600/$4,100	Shop and Crafts Technical Studies Mathematics	OJT APPREN	Ironworkers	Experience is often required. Some require the ability to read and interpret drawings, weld, or do layout work. Some workers are hired through union halls.

Stationary Engineers* Operate and maintain large equipment such as steam engines and generators used to supply heat, power, and lights.	Opportunity fair 610 employed $2,850/$3,280	Shop and Crafts Technical Studies Mathematics Science Language Arts	OJT APPREN VOC	Millwrights Water and Wastewater Plant Operators Petroleum Processors	Most employers prefer trained or experienced operators. Skills are learned through an apprenticeship or from years of experience in related jobs.
Tailors and Garment Fitters* Construct, alter, or repair articles made of cloth. Workers measure a customer, cut the fabric, and construct a garment to exact fit.	Opportunity very good 150 employed $1,200/$3,000	Home Economics Mathematics	OJT VOC	Clothes Designers & Patternmakers Upholsterers	Most employers do not require a formal education, although home economic courses or home sewing experience are usually necessary.
Upholsterers Make, fix, and rebuild upholstered furniture or repair automobile, boat, and airplane interiors and accessories.	Opportunity very good 30+ employed $1,250/$1,800	Home Economics Marketing and Sales Mathematics	OJT APPREN VOC	Tailors and Garment Fitters	Most employers require experience. Those who are willing to hire inexperienced applicants often require an eye for detail, good color sense, a flair for creative work, and some mechanical ability.
Water and Wastewater Plant Operators Control and maintain equipment that treats water and wastewater for a group of users. Monitor control systems and biological processes, adjust valves, and direct or control flows.	Opportunity very good 295 employed $2,500/$3,650	Shop and Crafts Technical Studies Mathematics Science Language Arts	OJT VOC ASSOC COL	Stationary Engineers Sanitarians	Most employers require certified operators. To become certified, applicants must have at least a high school diploma or equivalent and meet the minimum experience requirements depending on the level of the certificate.

Machine Operators

Laundry and Dry Cleaning Workers Receive, clean, and press clothing and other articles for customers. Coin-operated laundry attendants also instruct customers on the use of machines and maintain the area.	Opportunity very good 690 employed $1,100/$1,140	Home Economics Shop and Crafts Mathematics	OJT	Route Salespeople	Employers look for applicants who are dependable, neat in appearance, and have the necessary stamina to perform the work.
Pulp and Paper Workers Operate machines to turn wood pulp into products such as paper, newsprint, paperboard containers, and boxes. In Alaska, pulp mills usually produce dissolving pulp that is shipped to buyers.	Opportunity declining 140 employed $9.00/$15.50/hr	Shop and Crafts Agriculture Science Mathematics	OJT	Log Handling Workers	Employers require applicants to be at least 18 years old and in good physical condition for entry positions. Some require testing that measures mechanical aptitude, math skills, and manual dexterity.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Welders* Use heat to permanently join pieces of metal in order to make or repair parts used in a variety of products and construction projects. Three of the most common types of welding are arc welding, gas welding, and resistance welding.	Opportunity very good 890 employed $2,300/$3,000	Shop and Crafts Technical Studies Mathematics	OJT APPREN VOC	Millwrights Plumbers and Pipefitters Ironworkers Boilermakers Sheet Metal Workers	Many employers prefer welding experience and skill in more than one type of welding. Some require national certification or passing qualification testing for the work to be performed.
Woodworking Machine Operators Set up and run machines that cut, surface, shape, and join wood to produce finished products.	Opportunity limited 75 employed $9.50/$11.50/hr	Shop and Crafts Technical Studies Mathematics	OJT	Carpenters	Applicants must be at least 18 years old. Increasing automation is creating a demand for more highly skilled workers.

Transportation and Material Moving Occupations

Airline Ground Crew Workers Perform aircraft support services, such as refueling and cleaning aircraft, loading and unloading cargo and luggage, and helping direct planes when on the ramp.	Opportunity very good 1,880 employed $1,300/$1,730	Driver Education Shop and Crafts Mathematics Language Arts	OJT	Aircraft Mechanics Freight Handlers	Employers usually require applicants to have at least a high school diploma or equivalent and a valid driver's license. Previous airline or freight handling experience is helpful. A good driving record is important.
Bus and Taxi Drivers Bus drivers operate school buses, public buses, or charter buses usually within a local area. Taxi and limousine drivers operate smaller vehicles to transport passengers to locations of their choice.	Opportunity very good 1,510 employed $1,400/$1,870	Driver Education Social Studies Shop and Crafts Mathematics Language Arts	OJT	Local Truck Drivers	Employers prefer applicants who have experience and a good driving record. A road test may be required. Most bus drivers are required to be trained in first-aid and CPR. Special licenses are required.

Deckhands* Keep ropes, cables, and other equipment in safe working order. Sweep and wash desks, paint, and maintain the ship and its structures. Able seamen also load and unload materials, and stand watch. May watch for obstructions and steer the vessel.	Opportunity good 225 employed $115.00/$200.00/day	Shop and Crafts Mathematics Science	OJT VOC	Ship Officers and Engineers	Applicants must have a merchant mariner's document (sea papers) and a lifeboat certificate, and be in good physical condition. Navy or Coast Guard experience can be helpful.
Forklift Operators Operate equipment that has either a platform or two forks projecting from the front which can be raised or lowered by means of pedals and levers to move and lift heavy materials.	Opportunity good 525 employed $11.00/$18.20/hr.	Shop and Crafts Driver Education Mathematics	OJT	Freight Handlers	Most positions are filled by promoting people from within the organization. Often warehouse workers who load and unload materials by hand learn to operate forklift equipment when there is an opportunity.
Freight Handlers* Load and unload products shipped by rail, truck, ship, or air. Estimate maximum loads. Stack and band materials together, tag products, and install braces or padding around the load.	Opportunity good 900 employed $1,300/$1,700	Shop and Crafts Driver Education Mathematics Language Arts	OJT	Fork Lift Operators Shipping and Receiving Clerks Local Truck Drivers Airline Ground Crew Workers	Applicants need physical stamina and agility. Longshore workers, those who load and unload ships, are hired through union halls.
Grocery Baggers Put store items in sacks or boxes at the checkout for the customer. May then deliver the groceries to the customer's vehicle. May clean work areas and remove trash. May stock shelves and price merchandise.	Opportunity good 525 employed $870/$930	Mathematics Language Arts	OJT	Stock Clerks Cashiers and Grocery Checkers	No previous experience is required. Personal appearance and good manners are important. Physical strength and stamina are necessary.
Heavy Equipment Operators* Operate vehicles such as bulldozers, power shovels, cranes, tractors, pavers, backhoes, rollers, or pile drivers in order to move or place construction materials.	Opportunity good 2,480 employed $15.00/$18.20/hr.	Shop and Crafts Driver Education Mathematics	OJT APPREN VOC	Fork Lift Operators Long Haul Truck Drivers Oilers Rotary Drillers	Most employers require some experience in operating machinery. Applicants need good vision, depth perception, eye-hand-foot coordination, and physical stamina.
Local Truck Drivers* Use trucks or vans to move goods and materials over short distances. May load and unload materials, receive payments, and keep records of deliveries.	Opportunity very good 2,970 employed $1,700/$2,300	Shop and Crafts Driver Education Mathematics Language Arts	OJT VOC	Long Haul Truck Drivers Route Salespeople Bus and Taxi Drivers Refuse Collectors	Most employers require applicants to be at least 21 years old and pass a physical exam. Traffic and police records are usually checked. Mechanical ability is an asset.

Occupational Description	Job Outlook in Alaska, Number of Alaskans Employed, Approximate Monthly Pay	Subject Areas	Suggested Training	Related Occupations	Hiring Practices
Long Haul Truck Drivers* Operate trucks or tractor-trailers to transport goods and materials over long distances. Inspect truck and load before starting out. Make minor truck repairs while on the road.	Opportunity good 1,060 employed $2,000/$2,690	Shop and Crafts Driver Education Mathematics Language Arts Social Studies	OJT VOC	Local Truck Drivers Route Salespeople	Most employers require training or experience. Traffic and police records are usually checked. Drivers must have an Interstate Commerce Commission (ICC) card for vehicles over 10,000 pounds.
Packers and Wrappers Package and wrap products by hand or by machine so that the products can be shipped or marketed.	Opportunity fair 500 employed $1,100/$1,290	Shop and Crafts Mathematics Language Arts	OJT	Cannery and Frozen Food Workers Food Processing Workers Meat Cutters	Applicants must possess the necessary physical strength and stamina to perform the work. There is usually no previous training required.
Pilots and Flight Engineers* Fly and navigate aircraft to carry out a wide variety of tasks. Most are involved in transporting passengers, cargo, and mail. Others may dust crops, spread seed for reforestation, fight fires, take photographs, or fly air defense missions.	Opportunity very good 1,190 employed $18.00 to $36.00/flt. hr. (pilots flying turbine or jet aircraft earn more)	Mathematics Science Language Arts Social Studies Technical Studies	OJT/MIL VOC COL	Military Officers	Applicants must have the necessary technical skills and required FAA license. For insurance purposes, many employers require pilots flying commercially to have a minimum of 1,000 hours of flying time in Alaska.
Railroad Engineers Operate locomotives to move passengers and freight. Operate the throttle to accelerate the train and use air brakes to slow and stop it. Monitor operating systems. Check locomotives for mechanical problems before and after each run.	Opportunity limited 50 employed $14.00/$24.00/hr.	Mathematics Science Language Arts Shop and Crafts Technical Studies	HS OJT	Railroad Conductors Railroad Brake Operators Railroad Maintenance Workers	Positions are usually filled by promotion from the position of "firer." Applicants must pass physical exams with high standards of eyesight and hearing and be in good physical condition. High school graduates are preferred.
Railroad Conductors and Brakers Conductors supervise train and yard crews to ensure the safe and punctual delivery of cargo and passengers. Brake operators control the makeup, safety and movement of passenger and freight trains.	Opportunity limited 69 conductors 21 brakers $14.00/$23.00/hr. conductor $12.00/$21.00/hr. braker	Shop and Crafts Mathematics Science Language Arts Social Studies	OJT	Railroad Engineers	Minimum of a high school diploma is normally required. Applicants must be in good physical condition. Positions are generally filled from within based on seniority. Skills are acquired on the job.

Refuse Collectors Pick up and remove garbage and refuse from homes and businesses on designated routes.	Opportunity fair 330 employed $1,900/$2,160	Driver Education Shop and Crafts Mathematics	OJT	Local Truck Drivers	Generally no education or experience requirements. A driver's license and good driving record are necessary. Strength and physical fitness are important, as is dependability.
Service Station Attendants Sell fuel, clean windshields, and provide basic automotive services. May make minor auto repairs and adjustments, keep service areas and rest rooms clean, and drive tow trucks. May also change and repair tires.	Opportunity good 780 employed $1,000/$1,200	Shop and Crafts Mathematics	OJT	Automobile Mechanics Vehicle Cleaners	A driver's license, mechanical ability, and sales ability are important. Basic math skills are needed to figure bills quickly and accurately.
Yarding and Loading Workers Move logs from cutting areas to trucks. Duties involve directing which logs to move and signaling to machine operators when and where to move the logs.	Opportunity declining 350 employed $14.00/$15.50/hr.	Shop and Shop Driver Education Mathematics Science	OJT	Choker Setters Log Handling Workers Fallers and Buckers Freight Handlers	Many employers prefer some experience in the timber industry, especially knowledge of the equipment and processes involved in logging.

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